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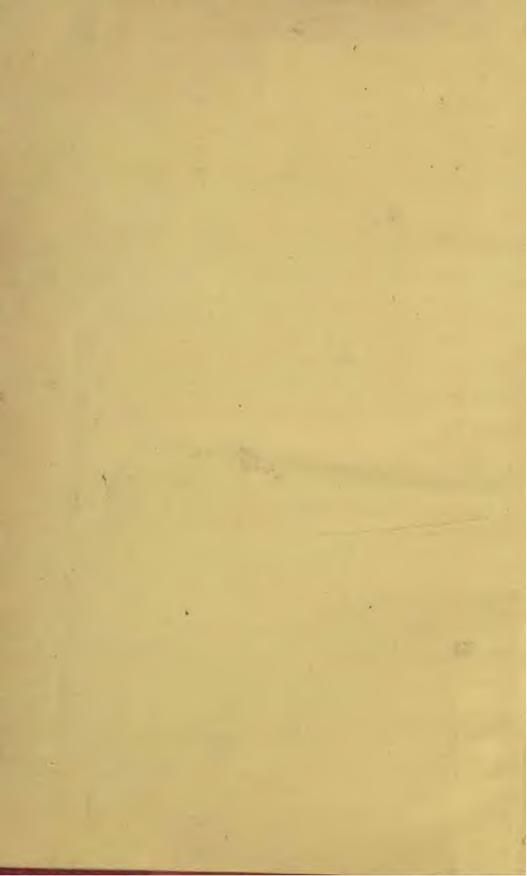
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# PĀNINI

A Study of the Cultural Material in the Ashtādhyāyī ]

1.

V. S. AGRAWALA, M.A., Ph.D., D.LITT.

Superintendent and Head of the Museums Branch, Department of Archaeology, New Delhi; (on deputation as) Professor of Indian Art and Architecture, College of Indology, Banaras Hindu University.

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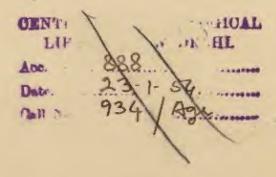
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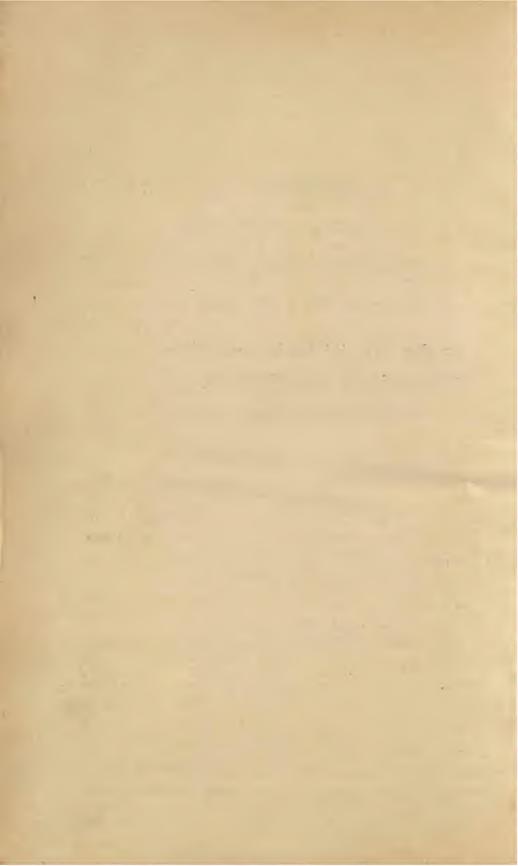
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## अष्टपुष्पिका

- १. पाणिनीयं महत् सुविहितम् ।
- २ः महती सूक्ष्मेक्षिका वर्तते सूत्रकारस्य।
- ३: शोभना खलु पाणिने: सूत्रस्य कृति:।
- ४. यच्छब्द आह तदस्माकं प्रमाणम् ।
- ५. सर्ववेदपारिषदं हीदं शास्त्रम् ।
- ६ः पाणिनिशब्दो लोके प्रकाशते।
- ७. आकुमारं यशः पाणिनेः।
- ८. पाणिनेराचार्यस्य सिद्धम् ॥

येन घौता गिरः पुंसां विमलैः शब्दवारिभिः। तमश्चाज्ञानजं भिन्नं तस्मै पाणिनये नमः ॥



#### PREFACE

The book aims at an examination of the geographical, social, economic, literary, religious and political data found in Pāṇini's Ashṭādhyāyī. The subject 'Pāṇini as a source of Indian History,' was suggested to me by my Professor Dr. Radha Kumud Mookerji M.A., Ph.D., while I was admitted to his Ph.D. class in 1929 as a Research Fellow in the Lucknow University. Chs. I—IV of the book substantially represent the Thesis approved by the Lucknow University for Ph. D. in 1941 and Chs. V—VIII for D. Litt. in 1946, with such additions and changes as later research made inevitable.

The value of such a study to Indian History can hardly be overestimated. It is due at once to the antiquity of Pāṇini's evidence, its definite and authoritative character as reliable as the history of India based upon epigraphic and numismatic records, and also to the singular fact in Sanskrit literature that the Ashṭādhyāyī is the work of an individual author (like its commentary the Mahābhāshya) and not the accumulated result of additions made to it from time to time by generations of teachers and pupils as happened in the case of the literature of Vedic Charanas or schools.

In a study of Pāṇinian evidence the greatest importance attaches to facts recorded in the sūtras. As already stated, the text of the sūtras with a few exceptions shown by Kielhorn is the same as that handed down from the time of Pāṇini. The gaṇas form an inalienable appendix to the sūtras and a genuine tradition of Gaṇa-pāṭha was known to Kātyāyana and Pataṇjali who at times have made the inclusion of a particular word in a gaṇa the basis of their comments. Unfortunately the present state of the Gaṇa-pāṭha has suffered from subsequent interpolations, and although there is much valuable material

especially concerning geographical, literary and gotra names found in the present Gaṇa-pāṭha, it has to be used with proper discrimination. I have always given preference to the sūtra evidence, but it does not mean that the Gaṇa-pāṭha can be ignored as useless accretion, for without it a substantial portion of the data of Pāṇini's language would remain unaccounted for. The contribution of the Gaṇa-pāṭha is of distinct value and its facts when substantiated by Pataṇjali may be regarded as authentic. In all cases where evidence from the gaṇas has been utilized its source is plainly indicated.

No scholar of Pāṇini can do without the invaluable help offered by the commentaries, and I must record my indebtedness to Patanjali's Mahābhāshya and the Kāsikā-vritti without which this work would not have been possible. Prof. Max Muller was the first to point out 'that Panini's sutras were evidently from the beginning accompanied by a definite interpretation, whether oral or written, and that a considerable proportion of the examples in the Bhashya must have come from this source (Weber, History of Indian Literature, p. 225, f. n.). As an instance we may point out that Patañjali himself refers to a Māthurī-vritti which as stated by Purushottamadeva in his Bhāshā-vritti (I.2.57), was a commentary on the Ashtādhyāyī, and was originally taught by oral instruction (tena proktam, na cha tena kritam, Bhāshya, IV.3.101; H.315) and later on compiled in the form of a book. The subsequent commentaries including the Mahabhāshya largely drew upon the older material. As Prof. Kielhorn has put it, 'We may, in my opinion certainly assume, that like Pāṇini himself, both Katyayana and Patañjali have based their own works on, and have preserved in them all that was valuable in the writings of their predecessors (Ind. Ant. XVI.106). Each case, however, has to be viewed on its own merits, and in the absence of more convincing proof the citations in the Kāšikā should not be pressed too far as evidence for Pānini's own time.

or so.

The aphorisms of Pāṇini are rich in historical and cultural material. It has been my effort here, firstly to evolve a classified presentation of the same, and secondly to broaden the scope of its interpretation by focussing on it as much light as was possible from comparative sources, utilising for the purpose the great traditional commentaries on Pāṇini's Sūtras, like the Vārttikas, the Mahābhāshya, the Kāsika as supplemented by the more important subsequent explanations, and secondly early Indian literature both Vedic and classical. In the course of my readings during the last twenty years, with mind constantly switched on to Pānini, I found light from many a source-Sanskrit, Pali and Prakrit, Brahmanical, Buddhist and Jain; and thus the work of understanding the true import of the cultural institutions in Pāṇini of which each word dealt with by him is a pointer gradually advanced. Words like Jaya, Ashadakshina, Raja-pratyenas, Ārya-Brāhmana, Ākranda, Grāmanī, Parishad, Chhandasya, Kāra, Harana-to name only a few out of hundreds-will bear testimony to the success of this method. Thus it has been possible to throw fresh light on a number of Pāṇini's sūtras by which their significance has been increased.

The Thesis reveals for the first time the deep relationship between the historical background of Pāṇini and Kauṭilya. The close proximity of their vocabulary and numerous items of cultural life common to both are worthy of greater attention, and point to underlying chronological relationships. Pāṇini is closely related in time to Kauṭilya by his numismatic data. It is very significant that there is not a single coin name in the Arthaśāstra which would reflect its late character. The numismatic evidence is completely in favour of its Mauryan date. Pāṇini must have preceded him by about a century

Reference within brackets are to the sūtras, as (I.1.1) denotes the first sūtra of the first pāda of the first adhyāya of the Ashtādhyāyī. For the Mahābhāshya text I have used

Kielhorn's edition, citing its reference by the number of volume and page; e.g., III.467 directs us to the last page of the last volume of that edition. In all other cases, the name of the author or the work quoted is indicated in a manner clear enough to follow.

I wish to express my grateful thanks to all previous writers whose works I have utilized in the preparation of this volume. The immense help and light which I have derived from them are not a mere matter of formal acknowledgment. I owe an obligation to the two volumes of Word-Index of the works of Pāṇini and Patañjali compiled by Sridharsastri Pathak and Siddheshwarsastri Chitrao and published by the Bhandar-kar Oriental Research Institute, Poona.

It is a pleasant duty to record my deep gratefulness to my Professor, Dr. Radha Kumud Mookerji, who prescribed for me this subject and whose constant help has greatly contributed towards the completion and publication of this work. In token thereof I respectfully dedicate this book to him. May this work be a small recompense to him for all the trouble he has taken on my behalf during the last twenty-five years. My sincere thanks are also due to Shri Sampurnananda Ji, Shri Chandra Bhan Ji Gupta and Acharya Narendra Deva Ji who kindly helped me in securing from the State Government of Uttar Pradesh through the Lucknow University a generous subvention in aid of the publication. I am also grateful to the authorities of the Lucknow University for inviting me to deliver a course of lectures in 1952 based on the contents of this book under the Radha Kumud Mookerji Lectureship Endowment Fund of the University.

I also thankfully remember the ungrudging help I received from my office-assistants, Shri Jagan Prasad Chaturvedi of the Mathura Museum, Shri Chandra Sen of the Lucknow Museum and Shri Gautam Dev Khullar of the C. A. A. Museum, New Delhi, in typing the Thesis and its finally revised press-copy. Shri G. S. Ramanathan of the office of the Government

#### Preface

Epigraphist, Ootacumund, and Shri Ram Shankar Bhattacharya, Banaras, deserve my thanks for kindly verifying the references. I am indebted to my son Shri Skand Kumar, M.A. for preparing the Index and to Shri Bhupal Singh Bisht of the C. A. A. Museum, New Delhi for the Maps.

BANARAS HINDU UNIVERSITY November 17, 1953

V. S. AGRAWALA



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- 3. India in Pāṇini's Time.

#### PLATE

Coins in Păņini.

<sup>\*</sup> Appendix III on Gatras with a critical text of their Gana-patha had to be held back for treatment as a separate monograph,

#### CHAPTER I

#### PANINI: HIS LIFE AND WORK

GRAMMAR (Vyākaraņa)—Grammar was regarded by the Indians as the first and most important of the sciences (Vyā-karaṇam nāmeyam uttarā vidyā, Bhāshya, 1.2.32; I.208; also shaṭsu aṅgeshu pradhānam). The results attained by them in the systematic analysis of language surpass those arrived at by any other nation. "The Sanskrit grammarians were the first to analyse word-forms, to recognise the difference between root and suffix, to determine the functions of suffixes, and on the whole to elaborate a grammatical system so accurate and complete as to be unparalleled in any other country." (Macdonell, India's Past, p. 136). Their singular achievements in this field have also rendered eminent services to Western philology.

The celebrated grammar of Pāṇini is the oldest surviving representative of this elaborate grammatical analysis of forms and linguistic investigation. Pāṇini is the architect of the magnificent edifice known as the Ashṭādhyāyī, which justly commands the wonder and admiration of the world. His work may be regarded as the starting-point of the post-Vedic age, almost entirely dominating the classical Sanskrit literature by the linguistic standard set by it. His grammar regulates equally the language of both poetry and prose in Sanskrit. Pāṇini's work holds good for all ages so far as Sanskrit is concerned. It is a permanent influence and institution in the world of Sanskrit even to this day.

PANINI'S GREATNESS—Weber regards Pāṇini's grammar as "superior to all similar works of other countries, by the thoroughness with which it investigates the roots of the language and the formations of its words." (History of Indian Literature, p. 216). According to Goldstücker: "Pāṇini's work is

His grammar "is the centre of a vast and important branch of the ancient literature. No work has struck deeper roots than his in the soil of the scientific development of India." Pāṇini's rules (sūtras) have been framed with the utmost conciseness and this dignified brevity is the result of very ingenious methods. His terminology adequately explaining all the phenomena of the language, demonstrates his great originality.

Coming at the end of a long evolution of grammatical studies the Ashṭādhyāyī achieved finally its position as the only adequate and comprehensive Sanskrit grammar. Regarded as the highest authority and also as infallible, Pāṇini superseded all his predecessors whose works have consequently been lost in oblivion. Of the older linguists, Yāska alone survives, and that because his work lay in the different field of Vedic exegesis.

Pāṇini undertook a profound investigation of the spoken and the living language of his day. He applied the inductive method in discovering and creating his own material for purposes of evolving his grammatical system. As a trustworthy and competent witness of linguistic facts, he cast his net so wide that almost every kind of word in the language was brought in:

शन्दास्सुबह्वः सकलितास्तान्पादाय पाणिनिना स्मृतिरुपनिवदा, (Kāśikā, IV.I.114).

This is shown, for example, by his rules applied to the accent, or the lengthening of the vowels in cases of calling from a distance (durād-dhūte), salutation (pratyabhivāde), and in the case of questions and answers (pari-prašna); or more specially, in his survey of place-names, and names of charanas, gotras and janapadas, for purposes of derivative formations which must have served an intensely practical need.

The characteristic feature of Pāṇini's system is that it derives words from verbal roots. He has given us comprehensive lists of suffixes and roots. In this way his grammar is a contribution not merely to Sanskrit, but to linguistics in gene-

ral, throwing light on the structure of the cognate Indo-European languages. Pāṇini, unlike Śākaṭāyana, did not carry to extremes the theory of treating all nouns as verbal derivatives, but also recognised the formation of fortuitous words (yadrichchhā śabda, nipātana-śabda) in the language for which no certain derivation could be vouchsafed. Pāṇini's work is distinguished by the balanced judgment which it demonstrates in relation to contentious or extreme views.

His work is also unique in one respect, viz., that like Yāska's Nirukta it is one of the rare masterpieces of old Sanskrit literature which is the work of an individual author, and not of a school. As Colebrooke has put it, the Ashṭādhyāyi "certainly bears internal evidence of its having been accomplished by a single effort" (Miscellaneous Essays, 1873, Vol. II, p. 5). According to Burnell: "Pāṇini's grammar has, in all probability, been little tampered with; we have better warrant for its integrity than in the case of any other work" (On the Aindra School of Sanskrit Grammarians, p. 31). For purposes of cultural and historical material the references in the Ashṭādhyāyī have the same value as epigraphic or numismatic records. Its credit is also very much enhanced by its admitted antiquity.

On the whole one may say that Pāṇini's grammar is related to Sanskrit like the tap-root of a tree, the source of its sap and vitality regulating its growth. For Indo-European philology, Pāṇini's work has proved of inestimable value. For Indian history and culture, the Ashṭādhyāyī is a mine of trustworthy information throwing light on numerous institutions, as the present study is directed to show.

The genius of Pāṇini appeared at a critical point in the history of Sanskrit to solve the crisis confronting it. The days of Vedic Sanskrit had come to an end by the time of Yāska, and fresh forms were coming into use. A new regulating and authoritative grammar was needed for bridging the gulf between the Vedic language and the rising popular speech or the classical Sanskrit which had come to stay. It was Pāṇini's mastermind

that saved the situation by devising a system which treated of the Vedic language on the one hand and the classical Sanskrit on the other with requisite synthesis and proper shifting of emphasis. Pāṇini's concentrated contemplation and penance accomplished a supreme task under the grace of God, to which tradition so amply testifies.

EPITHETS-Pānini's magnum opus, the Ashtādhyāyī, is a code of Sanskrit grammar consisting of about 4,000 or to be more precise 3,995 rules. Panini wrote in the sūtra style with admirable regard for economy of words. Although Katyayana after him also composed the varttikas in the sutra form, Panini alone is understood by the term sūtrakāra (Pānineh sūtrakārasya, Bhāshya, II. 2. 11; I. 414). In a kridanta rule (III. 2. 23) he teaches the formation amongst other words of sütrakära and šabdakāra. Patañjali speaks of Pānini adopting the sūtra style as the medium of teaching grammar (vyākaranain sūtrayati, III. 1. 26; II. 34). Previous writers were perhaps inclined to treat Vyākaraņa as composed of rules as well as individual words (lakshya-lakshana). But Patañjali tells us that Pānini's contribution consisted in framing sūtras to embody the linguistic phenomena and to build up a system, rather than pursue the arduous and lengthy process of taking each word separately (na bi Pānininā šabdāh proktāh, kim tarbi, sūtram, I.12). The title sabdakāra also may be applied to Pānini, since grammar concerned as it was with words is referred to as sabda in the Ashtādbyāyī itself (I.1.68 and VIII.3.86, śabda-saminā). Elsewhere Pānini derives śābdika as applied to a grammarian on account of his authorship of sabda or grammar (IV.4.34, Śabdain karoti śābdikah). Since Pānini was the promulgator of a complete system of grammar, Vyākarana, the title vaiyākarana also applies to him, and he himself uses this term for a grammarian in one of his sūtras (VI. 3.7).

KĀTYĀYANA'S ESTIMATE—Kātyāyana has been Pāṇini's ablest scientific critic, but also a follower. His own genius was of a high order. He subjected Pāṇini's work to a

searching examination, modifying and supplementing the sûtras where there was need for it in the process of time, initiating discussions on contentious grammatical theories, at times developed in as many as fifty-nine vārttikas (cf. sūtra I. 2. 64), and in other cases justifying and defending Pāṇini against his critics. He has written in a critical and scientific spirit, and not as a detractor of Pāṇini. The number of his vārttikas is nearly 4,263, showing that he laboured hard to bring out the depth and value of the Pāṇinian system.

There is unfortunately a tradition current in India, reinforced by legends that Kātyāyana was a biased critic of Pāṇini. The opinion is reiterated even by an eminent writer like Sabarasvāmin (sadvāditvāch-cha Pāniner-vachanam pramānam, asadvāditvān-na Kātyāyanasya, Mīmāmsā-Bhāshya, X.8.1). Prof. Kielhorn who set forth the true position of Kātyāyana in relation to Pānini, has shown that it would be a scientific mistake to stigmatize Kātvāyana as an unfair antagonist of Pāṇini, since the object which Kātyāyana and Patañjali have in view throughout their works is one and the same, the nature of their remarks being identical, but only differing in form (Kielhorn, Kātyāyana and Patanjali, p. 53). The Ashtādhyāyī instead of being weakened by Katyayana shines in his hands with added glory. Kātyāyana gives expression to his admiration for Pāṇini by concluding the vārttika-sūtras, in the following devout strain:

#### भगवतः पाणिनेः सिद्धम् ।

PATANJALI'S TRIBUTE—Patañjali, the author of the Mabābhāshya, has applied his mastermind to reveal the depth and range of Pāṇini's scholarship. Like Kātyāyana, Patañjali applies the term Bhagavān exclusively to Pāṇini in recognition of his supreme position in the field of study he had made his own. Only once the epithet refers also to Kātyāyana (III. 2. 3; II. 97) (Kielhorn, J.R.A.S., 1908, p. 503).

Patanjali next applies to Pāṇini the significant epithet Māngalika Āchārya (I.1.1; I.3.1; I.253), a great teacher

who commenced his treatise with a benedictory expression ensuring its continuity and development through the ages. There can be no doubt about Pāṇini's phenomenal success in the annals of human authorship, his work being greeted with universal approval: पाणिनीयं महत् मुनिहित्स (Bhāshya IV.2.66; II.285). 'Superbly accomplished is the grand treatise of Pāṇini.' His grammar was acknowledged as of superior authority over the works of his predecessors (सूत्रकारक शक्तिवर्ग मुग्निविषय: Padamañjarī on IV.1.93); and soon it spread from the elementary to the highest stages of studies. Patañjali testifies to the popularity of Pāṇini's work by saying that it was on the lips of young pupils (Ākumāram yasah Pāṇineḥ, I.4.89; I.347). The Kāsikā goes further and says on the basis of an old stock-example that the name of Pāṇini was acclaimed as authority all over the country पाणिनिश्चल लोके प्रकारते, इतिपाणिनि, II. 1.6.).

Another epithet applied by Patanjali to Pānini is that he is a Pramānabhūta Āchārya (I. 1.39; I.39), a teacher of the highest authority. He says that Pānini approached his task with a full sense of responsibility: 'Purified by the kuśa grass held in hand, the Acharya seated himself facing the sun and took infinite pains in composing each sūtra. Not one syllable is purposeless there, much less could a whole sūtra be' (I.1.1; I.39). This authoritative conception later on became the pivot of the maxim (paribhāshā) that the saving of half a mātra is regarded by the grammarians to be as gladdening as the birth of a son (Paribbashendu-sekhara, No. 122). Pāṇini adopted the sūtra style of composition based on utmost brevity, but not losing clarity. He was the founder of a new system planned with its logical method and scientific technique to solve the intricacies of grammar and reduce them to simplicity and precision as far as possible. He remains eminently understandable in spite of the rigour and conciseness of his work.

Patanjali also refers to the capacious intellect of Pāṇini by calling him an Analpamati Āchārya (I.4.51; I.335). It was by his comprehensive genius that Pāṇini was able to handle an

almost unlimited range of linguistic material, subject it to masterly analysis, and reduce it to an order and system. His vigorous understanding and method have for ages disciplined and invigorated the minds of generations of Sanskrit scholars.

Pantañjali also mentions the technical ability of Pāṇini by calling him a specialist in the forms of words and their meanings (Vrittajna Ācbārya, L.3.9; L.226). Pāņini was possessed of a phenomenal insight (mahatī sūkshmekshikā, Kāśikā, IV.2.74) into the true meaning (vritti) of words in all their aspects and bearings as they were obtaining in the usage of the different localities, Vedic schools (śākhās and charanas), families (gotras), trades, professions and social classes of his times. We learn from Yuan Chwang that 'Rishi Pānini was from his birth extensively informed about men and things.' (Siyuki, I. 115). Pāṇini for the most part discovered and created his own material. He has applied his scientific method to the arrangement of this material by bringing the numerous vrittis or derivative meanings of words under well-classified ganas or word-groups. It was a method, which, as pointed out by Whitney and Burnell, was unknown before him (Whitney, Atharva Prāt. p. 48; Burnell, On the Aindra School of Sanskrit Grammarians, p. 28). In fact, Pānini's name has gone down to posterity as the inventor of the device of the Gana-patha, which has done so much in the conservation of Sanskrit language and of its archaic and obsolete forms.

Lastly, Patañjali applies the significant epithet Subjit (I. 2.32; I.208) to Pāṇini in reference to the simplicity of his style which makes an erudite work so easy of comprehension by its lucidity and logic.

By his inner qualities of head and heart Pāṇini was able to appreciate the views of others in a spirit of detachment and with balanced judgment. He avoided extreme views and preferred the path of synthesis between conflicting theories. For example, it is well-known that the question whether a word denotes a whole class (ākriti) or only an individual (vyakti) was being

debated amongst the grammarians at an early stage. Later on this became the subject of a sharp controversy between Vājapyā-yana and Vyāḍi (*Bhūshya*, I.2.64; I.242,244), but Pāṇini seeing truth in either accepted both positions as explained by Patañjali.

It may also be noted that Katyayana's epithet to Paṇini has been also repeated at the end of Patanjali's work in the same spirit of homage: भगवतः पाणिनेराचार्यस्य सिद्धम्। (VIII.4.68; III.467).

Name. The author of the Ashṭādhyāyī is universally known as Pāṇini. Kātyāyana and Patañjali use this name. According to Baudhāyana, Pāṇini is a gotra name included amongst the Vatsa-Bhṛigus, having five Pravaras, viz. Bhārgava, Chyāvana, Āpnavāna, Aurva and Jāmadagnya (Pravara-kāṇḍa, 3). Pāṇini's own sūtra mentioning Pāṇin (VI.4.165) suggests Pāṇini to be a gotra name. According to Kaiyaṭa's derivation a son of Paṇin was Pāṇina, and a yuvan descendant of his would be called Pāṇini (Pradīpa on I.1.73.6).

The Trikāṇḍaśesba and Keśava, both later lexicons, mention Āhika, Śālaṅki, Dākshīputra and Śālāturīya as the appellations of Pāṇini. We have no means to verify the correctness of the first two names. According to Weber the name Śālaṅki, which occurs in the Bhāshya, though it does not clearly appear that Pāṇini is meant by it, leads us to the Vāhīkas (History of Sanskrit Literature, p. 218). It would at least accord with the fact that Pāṇini was an Udīchya. The last two are well-known names of Pāṇini. Patañjali quotes a kārikā describing Pāṇini as Dākshīputra (Dākshīputrasya Pāṇineḥ, I.75) after the name of his mother who was of the Daksha gotra. Dāksheya also would be Pāṇini's metronymic.

THE DAKSHAS, A NORTHERN PEOPLE—The Dakshas are referred to as a clan organised into sanigha as is apparent from the following examples in the Kāšika: Dākshaḥ sanigaḥ, Dākshaḥ ankaḥ, Dāksham lakshanam (IV. 3. 127). It also refers to a settlement of the Dakshas (Dāksho ghoshaḥ, IV.3.127), and as examples of the names of their villages are cited Dākshi-kūla and Dākshi-karsha (VI. 2. 129), seem-

ingly old illustrations, since Patañjali likewise mentions Dākshikarshu as the name of a village of which a resident was called Dākshikarshuka (IV. 2, 104; II. 294). That the Dakshas belonged to the north-west is suggested by the Kāśikā's discussion on Sanijnāyām kanthośīnareshu (II. 4. 20), citing a counterexample to show that the place named Dākshi-kanthā lay outside the geographical limits of Usinara. According to Pāṇini Uŝīnara formed part of Vāhīka (IV. 2, 117, 118). That the Dakshas did not belong to the eastern part of India either is shown by another comment (Kāšikā on IV. 2. 113), where it is said that the Dakshas lived outside the Prāchya-Bharata region, i.e., towards the west. -Patañjali's interpretation of Prāchya-Bharata on Pāṇini II. 4. 66 shows that the Prāchya country or eastern India began from the region of Bharata or Kuru-janapada (I. 493). Strictly speaking the Bharatas although residing in east Panjab were considered to form part of the Prāchyas. Thus proceeding from east to west we encounter the chain of the Prāchyas, Bharatas (region of Kurukshetra), Uśīnaras, Madras and Udichyas. The Gopatha Brāhmana mentions the Udichyas with the Madras (Gopatha, I.2.10), and the two jointly formed Vāhīka. The Dakshas, as shown by the Kāšikā, lived outside the Prāchya country, outside the Bharatajanapada, and outside the Usinara land which was in Vähika, and have therefore to be located towards further west, somewhere in Gandhara. This lends support to the tradition that Pāṇini of the Daksha gotra was born at Śalātura, which lay a few miles to the north of the confluence of the Kabul with the Indus river. The area once occupied by the Dakshis may probably have been somewhere in the lower valley of the Kabul river, between Dakka and the present site of Salātura.

ŚALĀTURA, THE BIRTH-PLACE OF PĀNINI—The term Śālāturīya applied to Pāṇini preserves the tradition of his original home being at Śalātura. The antiquity of the place is carried back to the time of Pāṇini himself, who mentions Śalātura in a sūtra (IV.3.94) for the sake of the formation Śālāturīya to

denote a person whose ancestors were natives of that place (abhijana). Thus the town existed even before Pāṇini, and the place of his ancestors may be taken as the place of his own birth. Vardhamāna refers to Pāṇini as Śālāturīya (Gaṇaratnamaho-dadhi, commentary on verse 2), and Bhāmaha and a Valabhī inscription also use this synonym for the grammarian (Śālā-turīya-matam, Bhāmaha; Śālāturīya-tantra, Ins. of Śīlāditya VII of Valabhi, Fleet, Corpus Inscript. Indi. III, p. 175).

Yuan Chwang visited Śalātura in the seventh century A.D. and found that the tradition about Pāṇini was current there. He writes, "To the north-west of U-to-kia-han-c'ho 20 li or so we come to the town of P'o-ls-tu-lo. This is the place where the Rishi Pāṇini, who composed the Ching-ming-lun (चित्र मिन् जुन्। शब्दिबा) was born.' (Beal, Siyuki, I. p. 114; also footnote equating the symbol p'o for so').

Salātura has been identified by Cunningham with Lahur, a small town four miles north-west of Ohind, in the angle of the river Kabul meeting the Indus (Ancient Geog. pp. 66-7; A.S.R., II.95). It can be approached from Jahangira station of the N. W. Ry. on the right bank of the Attock bridge from where it is about 12 miles. Buses plying between Mardan and Ohind pass by Lahur.

For about five hundred years Salatura continued as a

A Kharoshthi inscription now preserved in the Lahore Museum and dated in the Kushana year 40 (118 A. D.) was found at Shakardarra near Campbellpore. It mentions the boat-ferry of Sala (Salauokrama, Sten Konow, Kharoshthi Ins. p. 160), which plied from the eastern bank of the Indus and derived its name from the town of Salatura situated on the opposite side at some distance from the river. The name Shakardarra may be derived from Sakradvara meaning the 'entrance from the east.'

There are several high mounds at Lahur, at one of which recent excavations by Madame Corbeau exposed some stucco Buddhist heads and Gandhara terracottas. Yuan Chwang speaks of a statue of Rishi Panini being in worship at Lahur. R. B. K. N. Dikshit first informed me that a life-size image in Gandhara style, was previously found at a Lahur mound. It is only a Buddha image in Gandhara style, now preserved in the Peshawar Museum, where I saw it in 1946.

centre of Pāṇiṇian studies. According to Yuan Chwang, "The children of this town, who are his (Pāṇiṇi's) disciples, revere his eminent qualities, and a statue erected to his memory still exists." (Siyuki, I.116).

TRADITION ABOUT PANINI'S LIFE-The Indian tradition about Pānini is embodied in the Kathāsaritsāgara of Somadeva (11th century) and the Bribatkathāmanjarī of Kshemendra (11th century) both of which were based on the original Bribatkathā of Gunādhya. According to this, Pāṇini was a pupil of the teacher Varsha. He was not much known for his intelligence (manda-buddhi) and lagged behind in studies. Withdrawing for a time to the Himalayan seclusion he performed meditation and pleased Siva who revealed to him a new system of grammar (nava-vyākaraņa). His rival was Kātyāyana whom he finally overcame by his superior powers. Pāṇiṇi's grammar eventually replaced the older Aindra system. He also became a friend of the Nanda emperor. This tradition is supported in detail by Yuan Chwang as shown below. MANIUŚRI-MŪLAKALPA-This work (c. 800 A.D.) refers to king Nanda, his learned council of Brahmin philosophers and to his intimacy with Pānini: "After him (Śūrasena) there will be king Nanda at Pushpa City. In the capital of the Magadharesidents there will be Brahman controversialists (Brāhmānastārkikā bbuvi, verse 425) and the king will be surrounded by them. The king will give them riches. His minister was a Buddhist Brahmin Vararuchi who was of high soul, kind and good. His great friend was a Brahmin, Pāṇini by name."

RĂJAŚEKHARA—Rājaśekhara (c. 900 A.D.) gives further point to this tradition by saying that in the city of Pāṭaliputra there was an old institution called Śāstrakāra-parīkshā, the Board to examine authors of scientific systems. Before this Board appeared such great masters of grammar as Upavarsha, Varsha, Pāṇini, Pingala, Vyāḍi, Vararuchi and Patañjali. Examined (parīkshitāḥ) by this Board they attain-

(Jayaswal, Imperial History of India, p. 14).

ed fame. These names embody literary history over a long period.

Upavarsha was a commentator on the Mimāmsā and Vedanta sūtras (Jacobi, J.A.O.S., 1912, p. 15; cf. Śańkara-Bhāshya, III.3.53). His views about sabda are preserved to us in a citation by Śańkarāchārya who refers to him as Bhagavān Upavarsha (I.3.28). Varsha, his brother is said to have been Pānini's teacher. Pānini as a Śāstrakāra and author of a new grammatical system would have submitted his work to this learned assembly of Pataliputra. Pingala, the author of the Chhandovichiti, a name at present included in the Gana-patha of IV.3.73, is spoken of as Pāṇini's younger brother (anuja) by Shadgurusishya in the Vedarthadi pika commentary. Vyadi the author of the Sangraba-sutra, a known work on Grammar and highly spoken of in the Bhashya (cf. Patañjali on the meaning of Siddha decided in the Sangraha, I.6; also Sobhanā khalu Dākshāyanasya Sangrahasya kritih, I.468) was a junior contemporary of Pānini. Vyādi wrote his Sangraba in the sūtra style as is evident from Patanjali's reference to students called Sāngrahasūtrikas, (those who studied the Sangraha-sūtras, IV.2.60; II.284). Kātyāyana and Patañjali are well-known grammarians. Thus the order in which these names are mentioned may be taken to be that of chronology. Patañjali who is a known contemporary of Pushyamitra Sunga of the second century B.C. is the last of this exalted race of grammarians.

ACCOUNT OF YUAN CHWANG—The sources of information about Pāṇini's life are rather meagre and they should be supplemented by other sources that are available. Yuan Chwang is such a source and his account needs careful study. Most of the traditions recorded above are repeated by Yuan Chwang. The Chinese traveller visited Śalātura in person and

भ्रूयते च पाटलिपुत्रे शास्त्रकार परीक्षा— सत्रोपवर्षवर्षाविह पाणिनिर्पिगलाविह व्याडि: । वररुचि पतंत्रली इह परीक्षिताः स्वातिमुपजन्म: ॥ Kāvyamīmāmsā.

the information collected by him on the spot may be regarded as trustworthy, specially on points where Somadeva, Raja-sekhara, Mañjuśrīmūlakal pa and the Chinese traveller are in accord.

Having stated that Rishi Pāṇini who composed the Śabdavidyā was born at Śalātura, Yuan Chwang proceeds to say:

Referring to the most ancient times, letters were very numerous; but when, in the process of ages, the world was destroyed and remained as a void, the Devas of long life descended spiritually to guide the people. Such was the origin of the ancient letters and composition. From this time and after it the source (of language) spread and passed its (former) bounds. Brahma Deva and Sakra (Devendra) established rules (forms or examples) according to the requirements. Rishis belonging to different schools each drew up forms of letters. Men in their successive generations put into use what had been delivered to them; but nevertheless students without ability (religious ability) were unable to make use (of these characters). And now men's lives were reduced to the length of a hundred years, when the Rishi Pānini was born; he was from birth extensively informed about things (men and things). The times being dull and careless, he wished to reform the vague and false rules (of writing and speaking) - to fix the rules and correct improprieties. As he wandered about asking for right ways, he encountered Isvara Deva and recounted to him the plan of his undertaking. Isvara Deva said, "Wonderful! I will assist you in this." The Rishi, having received instruction, retired. He then laboured incessantly and put forth all his power of mind. He collected a multitude of words, and made a book on letters which contained a thousand ślokas; each śloka was of thirty-two syllables. It contained everything known from the first till then, without exception, respecting letters and words. He then closed it and sent it to the king (supreme ruler), who exceedingly prized it, and issued an edict that throughout the kingdom it should be used and taught to others; and he added that whoever should learn it from beginning to end should receive as his reward a thousand pieces of gold. And so from that time masters have received it and handed it down in its completeness for the good of the world. Hence the Brāhmaṇas of this town are well grounded in their literary work, and are of high renown for their talents, well informed as to things (men and things), and of a vigorous understanding (memory).' (Siyuki, pp. 114-115).

The Paninian tradition was still current even after the lapse of about eight centuries after Patanjali. Yuan Chwang faithfully repeats the much older tradition contained in the Mahābhāshya with regard to the spread of Vedic learning in all its offshoots and branches, the origin of grammar, the growth of the Aindra system, chaos produced by different grammatical schools, and finally the emergence at this crisis of Pāṇini with his new grammar, his eminent qualities and method. (1) ORIGIN OF ANCIENT LETTERS-Yuan Chwang's account of the primeval beginning of knowledge is in the nature of introductory remarks. This accords with the tradition almost universal in India regarding the divine origin of different sastras and the divine guidance received in the propagation of knowledge. Patañjali also transposes the scene to the divine world when he refers to the period of a thousand years of gods (divya-varsha-sahasra) during which time Brihaspati expounded the subject of letters (śabda-pārāyanam provācha) to his divine pupil Indra (Bbāsbya, L5.),

(2) GROWTH OF LITERATURE—'From this time.... the source (of language) spread and passed its former (bounds).' This is supported by Patanjali's account of the vast expansion of language after the first impulse to it was received from divine revelation, He writes: 'Here is the

भग्तद्वीपा वसुमती त्रयो लोकादचत्वारो वेदाः सांगाः सरहस्या बहुधा विभिन्ना एकगतमध्वर्युंशास्ताः सहस्रवरमा सामवेद एकविंशतिषा बाह्व्च्यं नवधायवंणो वेदो बाकोवाक्यमितिहासः पुराणं वैद्यकमित्येताबाञ्झब्दस्य प्रयोगिविषयः।

wide world comprising seven divisions; its rich literature including the four Vedas with their Aingas and mystic portions, their ramifications into 101 śākhās of Yajurveda, 1000 of V Sāmaveda, 21 of Rigveda, 9 of Atharvaveda, the Dialogue portions, Itihāsa, Purāṇa and Vaidyaka treatises constitutes the expansive source of language.' It is true that even before the time of Pāṇini Sanskrit literature had reached a stage of considerable development, as we shall see in examining the literary evidence.

(3) AINDRA SYSTEM-The tradition of an Aindra grammar prior to Pāṇini is strong in Sanskrit literature. It is found in the Taittiriya Sambitā where it is said that the gods approached Indra to elucidate speech (vācham vyākuru). Patañjali speaks of Brihaspati expounding to Indra the words by means of individual forms or examples (pratipadokta śabda, I.5; almost literally rendered by Yuan Chwang). The tradition in the Riktantra, a Prātišākhya work of the Śāmaveda, is more to the point: Brahma taught Brihaspati; Brihaspati taught Indra; Indra taught Bhāradvāja; and from him the system devolved on the Rishis.' (Riktantra, Dr. Suryakant's edition, Lahore, p. 3). Here also Brahmā as Prajāpati is the ultimate source of knowledge. Indra represents the divine agency. The school of Brihaspati was continued through his descendant Bhāradvāja who initiated other teachers in the system. There certainly existed a Bharadvaja school of grammar, Panini himself citing the opinion of Bharadvaja (VII.2.63). Patañjali frequently quotes the vārttikas of the Bhāradvājīyas (i.e. followers of the Bhāradvāja system, as Pāṇinīyas were of Pāṇini) as giving a version variant from that of Katyayana (III.1.38; II.46; III.1.89; II.70, etc.). The Rik Prātišākbya, which is generally regarded as prior to Pānini, also refers to the opinion of Bhāradvāja who seems to have been an adherent of the earlier Aindra system. The legendary accounts of the Kathāsaritsagara and the Bribatkathamanjari also mention that it was the Aindra school which was supplanted by Pāṇini's work.

Thus we find strong support for Yuan Chwang's allusion to the establishment of rules by Indra. The existence of the Aindra system has been dealt with in detail by Burnell (On the Aindra System of Sanskrit Grammarians).

- (4) DIFFERENT SCHOOLS BEFORE PANINI—'Rishis belonging to different schools each drew up forms of letters.' This refers to the intense literary activity about words and language preceding Pāṇini in which hundreds of great teachers including such names as Śākaṭāyana, Gārgya, Yāska, Śaunaka, Śākalya, Bhārdvāja, Āpiśali, Audavraji, participated. Burnell's list of teachers from the Nirukta, Pāṇini and the Taittirīya-Prātiśākhya (Aindra School, pp. 32-33) considered together with the list of numerous phonetic treatises and the terminological literature (cf. Dr. Sūryakānta Sāstri, Intro. to Laghu-Riktantra) furnishes evidence of the strong intellectual activity which preceded and followed the genesis of the Pāṇinīya śāstra. (See also for a list of 64 Teachers quoted in the Prātiśākhyas, Nirukta and Pāṇini, Max Muller's History of Sanskrit Literature, pp. 142-43).
- (5) COMPARATIVE DECAY OF GRAMMATICAL STUDIES—'Men in their successive generations put into use what had been delivered to them. And now mens' lives were reduced to the length of a hundred years... The times being dull and careless.' Patañjali also refers to purā-kalpa (by-gone ages) when keen Brahmanical pupils devoted themselves first to master Vyākaraṇa, and then took up the study of the Veda. But in a subsequent epoch students devoted less attention to grammar; they even considered it useless (anarthakain vyākaraṇam). It was to reform such dull and careless students that Pāṇini wrote (vipratipanna-buddhibhyo' dhyetribhya āchārya idani šāstram anvāchashte, Pat. I.S.). As to the lessening of mens' lives to a hundred years, Yuan Chwang is almost literally rendering Patañjali's remarks:

Kim punaradyatve yah sarvathā chirain jīvati sa varsha-šatam jīvati (I.S.).

'What to speak of the present times when the maximum span of human life is reduced to only one hundred years!' Pāṇini's object 'to fix the rules and correct improprieties' is supported by Kātyāyana referring to the Ashṭādhyāyī as sādhvanu-sāsana sāstra 'the book of correct instruction' (vārittika, I.1.44. 14; 1.104). Possibly it contains an allusion to Pāṇini's ministering to the normal speech current in his time.

(6) PĀNINI'S METHOD-'Pāṇiṇi was from his birth extensively informed about men and things. He wandered about asking for knowledge. He collected a multitude of words.' This information is valuable as it acquaints us with the fact that Panini for the most part discovered and created his own material, making minute observations of facts in the course of his travels on a linguistic mission. We find in Pāṇini organism and life, an elastic and warm-hearted approach to the speech of the common people bringing in a vast and varied material about their life. A closer study of the Ashtādhyāyi as attempted in the following pages reveals how Pānini had explored and exploited all possible sources of linguistic material in the country including dialects, folk-lore and local customs, e.g. names of Yakshas like Višāla used as personal names (V.3.84); pīlu-kuna, a name for ripe berries of the Pilu tree (V.2.24); eastern sports, and names of coins, weights and measures, etc. His recording of the differences in the accentuation of names of wells situated on the right and left banks of the river Beas is a true pointer to his painstaking method, on which the author of the Kāšika observes: 'the Sūtrakāra was endowed with deep and subtle insight."

# महती सुक्ष्मेक्षिका वर्तते सूत्रकारस्य । (IV.2.74).

Pāṇini's travels in search of facts from the living language and the method of personal discussion and interrogation to elicit information were in the manner of the true Takshaśilā style, which was marked by a practical bias in the pursuit of academic studies. We have a graphic account in Buddhist literature describing how the royal physician Jīvaka was directed by his teacher to examine the plants in the region of Takshaśilā as sources of medicine (Mahāvagga, VIII.1.6 ff). Born at Śalātura as he was, Pāṇini must have been brought up in the academic tradition of Takshaśilā which was a far-famed centre of learning in that period. In one of the Jātakas we are told how students after completing their studies at Takshaśilā, wandered far and wide, acquiring all practical uses of arts, and understanding the various country observances (Takkasilain gantvā uggahita-sippā tato nikkhamitvā sabbasamaya-sippañ cha desachārittañ cha jānissāmāti anupubbena chārikain charantā, Jāt. V.247).

- (7) PĀNINI AND MAHEŚVARA—The information that Pāṇini possessed a well-conceived 'plan of his undertaking' which was highly approved of by Īśvara Deva is of importance in crediting the grammarian with his full share of independent and original thinking in the execution of the Ashṭādhyayī. The legend of Īśvara Deva indicates the traditional divine help usually associated with all pious undertakings. 'The Rishi having received instruction, retired.' It points to the period of Pāṇini's intellectual labour and single-minded devotion to his work in quiet surroundings (śuchāv-avakāše, Bhāshya, I.39).
- (8) PĀŅINI'S EFFORT—'He then laboured incessantly and put forth all his power of mind.' It is almost a literal translation of Patañjali's remark about Pāṇini taking great pains in making his sūtras: Pramāṇa-bhūta āchāryaḥ mahatā yatnena sutrani praṇayati sma (I.1.1; I.39). There can be no doubt about Pāṇini putting forth supreme effort to produce a work of such comprehensive nature and brevity as the Ashṭādhyāyī.
- (9) PĀŅINI'S MENTAL POWERS—Yuan Chwang speaks of Pāṇini's spirit and wisdom, and of his vigorous mind which he devoted to investigate worldly literature (Siyuki, I.116). We have already spoken about Patañjali's tribute to Pāṇini as anal pamati āchārya, explained by Kaiyaṭa as medhāvī, 'endowed with great understanding and memory.' We may confidently

dismiss the story of Pāṇini being dull at school. Moreover, the information that Pāṇini was extensively informed about men and things from his very birth indicates his inherent practical turn of mind and aptitude for observation amply borne out by the contents of the Ashṭādhyāyī.

(10) EXTENT OF PANINPS WORK-'He made a book on letters which contained a thousand slokas; each sloka was of thirty-two syllables.' It indicates the extent of Pāṇini's Ashtādhāyī consisting of 3,981 sūtras plus 14 pratyāhāra sūtras, computed by the śloka measure of 32 syllables each. Sköld has somewhat misunderstood this. He writes: 'This curious statement can hardly be interpreted in another way than assuming, that the work of Pāṇini, just as so many other Indian works on grammar, was originally written in metrical form.' (Papers on Pānini, p. 32). This is an untenable inference. As a matter of fact no Indian grammar, Sanskrit or Prakrit, is in metrical form. The Ashtādhyāyī was originally written in sūtra style, and its bulk from the beginning was very nearly 1,000 ślokas, as it is to-day. The statement is akin to the computation of Vvādi's Sangraha, also in sūtras, as laksha-ślokātmaka. The Kāšikā on IV.2.65 says that not only Pāṇini's work but those of Kāśakritsna and Vyāghrapāda also were in sūtra style (Dašakam Vaiyāghrapadīyam; Trikam Kāšakritsnam). Even up to a late period grammatical works were being written in sūtra form.

(11) PĀŅINPS WORK, A COMPLETE DIGEST—'It contained everything known from the first till then, without exception, respecting letters and words.' Pāṇini's work is rightly described by Patañjali as a vast ocean of science (mahat śāstraugha, Bhāshya, I.1.1, I.40); also vast and well-done (Pāṇiniyam mahat-suvihitam, IV.2.66; II.285). He also describes how Pāṇini's work was based upon the material available in the different schools of Vedic learning so that it became acceptable to all of them (Sarva-veda-pārishadam hīdam śāstram, Bhāshya, II.1.58; I.400).

Burnell truly points out that for the Ashtadbyayi to have

gained such a position of authority, 'it must have been vastly superior in the eyes of the Brāhmaṇas to all the numerous treatises which must have been in existence before Pāṇini's time.' (Aindra School, p. 38). Pawate has recently raised the question of Pāṇini's borrowings from his predecessors, a point which deserves much further consideration (cf. Structure of the Ashṭādhyāyī by I. S. Pawate, Hubli). We find in the Riktantra, a Sāma Prātišākhya which Dr. Sūrya Kānt attributes to Audavraji some of Pāṇini's sūtras quoted almost verbatim (cf. Riktantra, sūtras 195-218).

(12) PANINI AND PATALIPUTRA—'He then closed it and sent it to the king (supreme ruler), who exceedingly prized it.' The Manjusrimulakalpa, Somadeva, and Taranatha all relate the story of Pānini's friendship with one of the Nanda kings. Rājašekhara records a tradition, already referred to, showing Pānini's connection with Pātaliputra. It is likely that Pāṇini visited Pāṭaliputra in person to participate in the Sāstrakāra-parīkshā rather than send his book through an emissary, Pataliputra held a pre-eminent position in the literary life of the nation during the Nanda and Maurya periods. Chanakya, a resident of the distant North-West like Panini himself, and nurtured in the glorious traditions of the Takshsila school, also visited Pāṭaliputra. The Atthapakāsinī commentary of the Simhalese Mahāvamsa narrating the early life of Chānakya relates how during the course of his intellectual career to establish his reputation he was attracted to visit Pāṭaliputtra: (vādam paryesanto Pupphapuram gantvā)."

We may take it that Pāṇini's mission to the celebrated capital of the Magadhan empire was not very different from that of Chāṇakya, viz. a desire to have his work valued by the most competent judges gathered at the court of Pāṭaliputra. THE GREAT SYNOD (Sabbā)—It is interesting to note that

<sup>&</sup>lt;sup>1</sup> I am grateful for this reference to Śrī C. D. Chatterji, M.A., History Department, Lucknow University.

this academic institution continued even in the time of the Mauryan emperors of Pataliputra, as indicated by Megasthenes and other Greek writers. In the words of Megasthenes the Brāhmanas "are employed publicly by kings at what is called the Great Synod where at the beginning of the new year, all the philosophers are gathered together, and any philosopher who may have committed any useful suggestion to writing, or observed any means of improving the crops and cattle, or for promoting the public interests, declare it publicly." (Strabo, XV.1., McCrindle, Megasthenes, Frag. XXXIII). Diodorus also refers to these distinguished gatherings at the beginning of each new year in which the learned men participated and the sovereign of the land acted as patron (McCrindle, Megasthenes, Frag. I, p.39). These statements corroborate the Sanskrit and Păli accounts of the congregation at Pățaliputra, and Răjasekhara's Śāstrakāra-parīksbā very nearly corresponds to the functions of the Great Synod described by Megasthenes. The time of its meeting is recorded as the beginning of each new year. Very probably the technical term for this Synod and the Board responsible for the Sāstrakāra-parīkshā was Sabhā, as in the expressions Chandragupta-sabhā and Pushyamitra-sabhā used by Patañjali (I.77; see also var. lect. at p. 515)1 and also Rājasabhā by Pāṇini in sūtra II, 4.23 (sabhā rājamanushya-pūrvā). (13) RECOGNITION OF LEARNING-Victors at these synods who distinguished themselves publicly by producing a scientific contribution 'committed to writing' which promoted public interest or was conducive of general welfare, must have deserved to be adequately rewarded. Speaking in general it is said that "in requital of their services they receive valuable gifts and privileges.' (Diodorus, Frag. I, p. 38). Megasthenes in continuation of his account of the Great Assembly specifically writes: "He who gives sound advice is exempted from paying any taxes or contributions." (Meg. Frag. XXXIII).

Chandra cites Chandragupta-sabbā only on his sūtra II.2.69 corresponding to Pāṇini, II.4.23,

We have a suggestive word in Patanjali, viz. Sābhā-sanna-yanaḥ, 'the honour derived from literary exposition in a Sabhā, (I.1.73; I.189). Pāṇini himself uses the word sannayana in the special sense of sammānana (I.3.36), i.e. bestowal of honour on successful exposition of a śāstra (cf. Kāŝikā on sammānana, I.3.36).

Yuan Chwang speaks of a thousand pieces of gold as the reward received by one who mastered the Ashṭādhyāyī from beginning to end. Sūṭra VI.2.65 (Sapṭamī-hāriṇau dhar-mye'haraṇe) presupposes a customary payment of this nature called dharmya and speaks of its recipient as hārin, one who took away the dharmya prize (āchāra-niyatain deyain yaḥ svīkaroti, Kāśikā). The rule prescribes acute accent on the first syllable of the word denoting the recipient. One of the stock-illustrations cited by Paṭañjali actually makes the vaiyākaraṇa or grammarian a recipient (hārin), and speaks of an elephant as his customary fee (Bhāshya, VI.2.52; III.130; Kāśikā, VI.2.65, vaiyākaraṇa-bastī). The gift of an elephant as a prize could have originated only in the east of India. Kauṭilya mentions 1,000 silver pieces as the reward of learning (vidyāvataḥ pūjāvetana, Arth. V. 3; p. 248).

The above detailed analysis shows that the tradition recorded by Yuan Chwang was based upon facts of Pāṇini's life as known at that time.

PĀŅINI AS A POET—There is a tradition that Pāṇini was also a poet. It is suggested by certain verses cited from a poem named Jāmbavatījaya attributed to Pāṇini in certain anthologies. A verse in the Sadukti-karnāmṛita refers to Dākshīputra as a poet. The available information with regard to Pāṇini as a poet is put together by Pischel (Z.D.M.G., XXXIX pp. 95 and ff.) who is inclined to accept the theory that Pāṇini was also a poet. Bhandarkar, on the other hand, holds that the style in which the verses ascribed to Pāṇini are written is sufficient to prove that they cannot be by that grammarian (J.B.B.R.A.S., XVI, p. 344). Prof. Kshitis Chandra Chatterji holds the same view

and after discussing at length all the known verses assigned to Pāṇini dismisses the theory of his authorship in these words: "The fact that Panini as a poet is nowhere mentioned in the Mahābhāshya or in any of the later first-rate works of the Pāṇini school and that annotators and commentators have racked their brains to explain away ungrammatical forms instead of regarding the uses in the Jambavatīvijaya as jnapakas, that some of the verses attributed to Pāṇini in one anthology are attributed to other poets in others, that some of these verses show distinct traces of borrowings of a much later period, that none of the verses belonging to the Jāmbavatīvijaya bear the stamp of the grammarian on them, that some of them contain forms which would make Pāṇini shudder, and that some of them seem to be composed as examples for a work on rhetoric of a much later period, clearly indicate that the verses cannot have been the work of poet Pāṇini. The Jāmbavatīvijayakāvya or the Pātālavijaya-kāvya must have been composed by a poetaster of about the ninth century A.D. who made use of many peculiar grammatical forms in it and fathered it on Pănini, the great grammarian." (Cal. Oriental Journal, Vol. I, pp. 22-23; also p. 135).

We may, however, note that in a kārikā of the Bhāshya, Pāṇini is referred to as a kavi: tadakīrtitam-ācharitam kavinā (I.4.50; I.334). But the meaning of kavi is not necessarily a poet. Although the Kāšikā equates kavi with the sūtra-kāra, both Kaiyaṭa and Nāgeśa understand kavi not as a poet, but as

one possessed of supreme wisdom (medhāvī).

THE ASHŢĀDHYĀYĪ: (i) Its Name.—The Ashṭādhyāyī is differently designated as (1) Ashṭaka (ashṭāv-adhyāyāḥ parimāṇamasya sūtrasya, V.1.58); (2) Pāṇinīya (Pāṇininā proktam, IV.3.101); (3) Vrittisūtra (Bhāshya I.371 differentiating Vrittisūtra from vārttika).

In the illustrations to several sūtras, the Kāśikā speaks of the Pāṇinīya system as an akālaka grammar (Pāṇinyupajñam akālakam vyākaraṇam, II.4.21, IV.3.115 and VI.2.14). The name is significant as showing that Pānini wisely excluded from his purview the discussion of kāla or tenses like Paroksha (Perfect) and Variamana (Present), on the exact definition of which subtle and elaborate arguments were often advanced by grammarians (cf. Bhāshya, III.2.115; II.120, III.2.123; II.123). 'Some say Paroksha means the lapse of a century; others say that which is screened from the eye of the speaker is Paroksha; still others contend that an interval of two to three days constitutes Paroksha' (Bhāshya, II.120). Pāṇini took a practical view in the matter, as indeed he did in the case of other extreme views also. In the Sūtra-kānda (I.2.51.57) he says that it is not within the province of the grammarian to lay down rules (asisbyam) about particulars of time and tense durations, since he must depend on the usage of the day (samijna-pramana) for such regulations. This position of Pānini expressed in the sūtra 'Kālopasarjane cha tulyam' (I.2.57) must have been responsible for the epithet akālaka applied to his grammar.

(ii) TEXT—The text of the sūtras has been handed down to us almost intact by the method of oral transmission by which Sanskrit learning through the ages has descended from generation to generation through a succession of teachers and pupils (guru-sishya-pāramparya) instead of being conserved in writing. This method of oral teaching of Pāṇini continued for many centuries and Yuan Chwang noticed it as prevailing in his time also: "And so from that time masters have received it and handed it down in its completeness for the good of the world." (Siyuki, I.115).

According to the author of the Svarsiddbanta-chandrika the Ashtadhyayi consists of 3,995 sūtras, i.e. 3,981 sūtras and the 14 pratyāhāra-sūtras.¹ Böhtlingk's critical edition contains 3,983 sūtras. Dr. Kielhorn after a detailed enquiry into the

<sup>&</sup>lt;sup>1</sup> Chatnh-sahasrī sūtrāṇām paūcha-sūtra-vivarjitā, Ashṭādhyāyi Pāṇiniyā sūtrair-māheivaraih saha (Svarasīddhānta-chandrikā, p. 3, verse 15, Annamalai Un.). 'The Text of the Ashṭādhyāyī' by K. Madhava Krishna Sharma, J.U.P.H.S., July, 1940, pp. 52-65.

text of the Ashṭādhyāyī came to the conclusion that "the text given in the Kāšikā-vṛitti (and that of the Ashṭādhyāyī in the editions) contains 20 more sūtras than the original text." (Ind. Antiquary, XVI.184). This increase is accounted for in two ways, viz. (1) by applying the principle of yoga-vibhāga or splitting into two what Pāṇini originally read as a single sūtra, and (2) by introducing some vārttikas as full-fledged sūtras in the present text of the Ashṭādhyāyī. There is also evidence of retouching of some of the sūtras by introducing into them some words from the vārttikas.

Some also discuss that the original text of the Ashtādhyāyī contained (1) the sign of nasalization marked on indicatory vowels (Upadeśe'janunāsika it, I.3.2); (2) the sign of svarita accent to denote adbikāra (Svariten-ādbikārab, I.3.11); (3) accentuation of the text as in the case of Vedic works (traisvaryapātha); and (4) the Samhitā-pātha or arrangement by which the sūtras of each pāda are read in continuation and are joined to each other by Sandbi. But there is also the view that these features were not a part of the original text of Pāṇini, but only assumed by teachers. We know that in the case of the nasal and svarita marks the followers of the Pāṇinīya school now take recourse to oral tradition, to indicate where such marks existed in the sūtras. This suggests an oral transmission from the time of Pāṇini's upadeša or first instruction. The Ashṭādhyāyī with an accented textual tradition, is not known. Kaiyata is in favour of the hypothesis of ekasruti or unaccented text from the beginning. The theory of Sambitā-pātha which was being discussed even before Patañjali (cf. śloka vārttika on I.4.56 discussing riśvara and viśvara, the latter form being possible only

<sup>&</sup>lt;sup>2</sup> In one case unnoticed by Kielhorn we have evidence of the fact that even before the time of Patañjali, variant wording of the sūtra had come to be discussed; cf. III.2.134, Iba kechid-ākver iti sūtram paṭhanti, kechit prāk-kver iti, Bbāsbya, II.135. There are some additional variants also to be noticed, c.g. Kiāikā III.3.78, IV.1.117, VI.1.156, VI.2.134; Padamañjari, IV.3.118, IV.4.88; Siddhāntakaumudī V.2.64, V.2.68).

in Samhitā-pāṭha, Bhāsyha, I.340) appears to have been adopted more as a convenient device to get over stray cases of difficulty of interpretation rather than as a textual reality.<sup>1</sup>

(iii) GANA-PĀŢHA—The Gaṇa-pāṭba forms the most important accessory treatise to the Asbṭādbyāyī. The gaṇas were not known in the Aindra School (Burnell, Aindra System, pp.28-30). They must have been Pāṇini's innovation. Patañ-jali definitely states that Pāṇini first compiled the Gaṇa-pāṭba, and then composed the sūṭras (Evam tarbi Ācbārya-pravṛittir-jñāpayati sa pūrvaḥ pāṭbo'yam punaḥ pāṭbaḥ I.1.34; 1.92-93). Yuan Chwang's reference that Pāṇini collected a multitude of words and made a book, almost endorses Patañjali's statement regarding the priority of the Gaṇa-pāṭba to Sūṭra-pāṭba.

The significance of the Gana-patha is that it introduces a comprehensive principle of classification by which similar grammatical formations may be grouped together and brought under the operation of a common grammatical rule. By this original device a large mass of linguistic data is reduced to order, system and simplicity so as to make for their easy understanding. By this method Pāṇini was also able to take note of comprehensive geographical, social, political and cultural details, names of towns, regions (janapadas), rivers, families (gotras), schools (charanas), republics (sanghas), as examples of single short rules. Thus Pāṇini's genius was able to utilise what was primarily designed as a grammatical technique, to throw light upon the life of the people and serve as a source of sociological and historical studies. By its flexibility the way was left open for the incorporation into the Gana-patha of new material as it cropped up in course of time so as to render the system always up to date.

A critical reconstruction of the Gana-pātha is an essential part of the Pāṇinian textual problem. The Kāšikā has preserv-

<sup>&</sup>lt;sup>1</sup> See also S. P. Chaturvedi, 'On the Original Text of the Ashtadhyayi,' New Indian Antiquary, Vol. 1. pp. 562-569,

ed lists of words belonging to each gaṇa. The evidence of the Chāndra-vṛitti also, shows that the Kāšikā was following a previous tradition. Kātyāyana and Patañjali were also at pains to conserve the purity of the Gaṇa-pāṭha. In many cases they have critically examined the inclusion of certain words in a particular gaṇa, e.g. ulūka and Kshudraka-Mālava in Khaṇḍi-kādi (IV.2.45); nṛinamana in Kshubhnādi (VIII.4.39); Śākalya in Lohitādi (IV.1.18, on which there is a long discussion); takshan in Śivādi (II.262; Kātyāyana has three vārttikas to discuss the reading in the group); Garga-Bhārgavikā in Goṇavanādi (II.4.67; I.492); and Atharvan and Ātharvaṇa in the Vasantādi group (Bhāshya II.320, cf. Patañjali's remark that the words are read four times in the Ashṭādhyāyī).

Their discussions, helpful in reconstructing a genuine text of the Gana-patha, create the impression that the Paninian tradition attached as much authority to ganas as to sūtras. It is, however, difficult at present to ascertain in all cases whether a particular word was originally included in its gana. The commentaries on Pānini have proceeded on the assumption that the basis of the Gana-pātha is generally sound. We must agree with Dr. Bhandarkar that most of the words in the gayas must have been handed down from the time of Pāṇini himself, a good many being cited by Patanjali in his great commentary (Ind. Ant., I.21). For example, the Yaskādi group (II.4.63) is analysed by the Kāśikā; out of a total of 36 words 16 have been directly traced to 5 different ganas of Pāṇini, viz. the first five words to Śivādi (IV.1.112); Kudri, Viśri, Ajabasti, Mitrayu to Grishtyādi (IV.1.136); Pushkarsad to Bāhvādi (IV.1.96); Kharapa to Nadādi (IV.1.99); Bhalandana again to Śivādi (IV.1.112); and Bhadila, Bhadita, Bhandita to Aśvādi (IV.1. 110). Moreover, intrinsic evidence from the sûtras in support of Gana-pātha is sometimes available; e.g. the reading of Pravahana in IV.1.123 is presumed by the sūlra VII.3.28; or the reading of the gana Sarvādi is authenticated by several sūtras of Pāṇini himself like Pūrvādi (VII.1.16), Dvyādi (V.3.2), Datarādi (VII.1.25) and Tyadādi (VII.2.102). The Lohitādi-Katanta group was included in the Gargādi gaṇa (IV.1.105), which like the Bidādi (IV.1.104) must be considered as one of the best preserved groups.

On the other hand the text of the ganas, especially of those which were called akriti ganas (i.e. of which the list was left open by Pāṇini himself), did lend themselves to later additions. Patañjali distinguishes two kinds of ganas, firstly those fixed (pathyante) by Panini, and secondly those which were only illustrative (ākriti).1 The process of interpolation must naturally have been more freely operating in the case of groups which were of linguistic importance, as Ardharchādi (II.4.31), Gaurādi (IV.1.41), Tārakādi (V.2.36). On the other hand, ganas containing lists of proper names were comparatively more stable, as they tended to become obsolete in time. Pāṇini's names of gotras could be verified in the light of lists given in the oldest Śrauta-sūtra text of Baudhāyana in the Mahāpravarakānda. Groups in which geographical names predominate (e.g. Dāmanyādi and Takshasilādi) can to some extent be verified from the mention of those place-names in old independent sources, as the Pāli literature, the Mahābhārata and the accounts of the early Greek writers. A large percentage of place-names in the ganas is undoubtedly archaic, and in many cases not traceable outside the Ashtādhyāyī. For example, the tribe of the Savitri putrakas in the gana Damanyadi (V.3.116) must date from Pāṇini himself, as it is unknown in literature except in one passage of the Karna-parvan (Mbh., 5. 49). At any rate the possibility of fresh accretions to lists of janapadas and placenames was considerably less after their examination by Patanjali.

In a vārttika on the Kraudyādi gaņa (IV.1.80) Katyāyana refers to the Raudhyādi class, which Patañjali informs us was identical with the former (Bhāshya, IV.1.79; II.233). Since

<sup>&</sup>lt;sup>1</sup> Cf. Patanjali on II.1.59, Śrenyādayah pathyante, kritādir-ākriti-ganah, i.e. of the two groups in the same sūtra one was fixed and the other was only illustrative.

Raudhi is not included in the Pāninīya Gana-pātha, we may infer that in some other grammar (vyākaran-āntara) the gana was named after it. We are indebted to Bhartrihari for the valuable information that the grammar of Apisali (a predecessor of Pānini) arranged the words of the gana Sarvādi (I.2.27) in a different order (Kielhorn, Intro. Bhāshya, II.19). The fact, however, remains that the Gana-patha evidence is at best only secondary and should always be taken with caution.

KĀŚIKĀ. ITS VALUE FOR PĀNINIAN TRADITION-The Kāšikā is now the only ancient, exhaustive, concrete and authoritative commentary on the Ashtādhyāyī. According to Haradatta it was written at Banaras (Kāšishu bhavā). Its importance for interpreting Panini cannot be overrated. Amongst previous commentaries Bhartrihari refres to Vrittikāra Kuni (Kielhorn, Bhāshya, Vol. II. Intro. p. 21, footnote) and Kaiyata mentions that Patañjali followed Kuni as an authority (Pradīpa, I.1.75, Bhāshyakāras-tu Kuni-daršanam ašisriyat). A comparative examination of the extent commentaries a on Pāṇini, Tripādī, Bhāgavritti in quotations, Kāšikā, Nyāsa, Padamañjari) shows that each subsequent author was following the pre-existing Paninian tradition.

An intensive study of the Kāśikā, reveals its immense indebtedness to the Mahābhāshya. In the first verse the author explicitly states his dependence on the Bhāshya and also on an earlier commentary which unfortunately is left unnamed (Vrittau Bhāshye). Even the perusal of a few sūtras will show how completely the Kāšikā relied on Patanjali for its material and the stock of its examples. The numerous illustrations in the Bhashya on IV.3.42 are bodily taken by the author of the Kāšikā, who did his work intelligently and not as a mere copyist of the older material. In discussing the meaning of Prachya-Bharata (II.4.66) the Kāšikā replaces Auddālakāyana of Patanjali by Arjunayana, the name of a tribe nearer to its own time. (cf. reference to Arjunayana in the Allahabad Pillar Inscription of Samudragupta).

It may be noted that the Kāšikā does not confine itself only to the tradition of Patanjali, Kātyāyana and Pāṇini. It has cited some older traditions showing that it considered a wide range of material. The best illustration of this fact is to be found in the example to sūtra I.4.86, anu-Śākaṭāyanain vaiyā-karaṇāb, i.e. 'all grammarians were lesser than Śākaṭāyana.' Śākaṭāyana was a well-known predecessor of Pāṇini. The Kāŝikā here thus cites and conserves 'an older grammatical tradition, though Pāṇini long ago had eclipsed the fame of Śākaṭāyana. It also proves the tenacity of the tradition embodied in the examples (udābaraṇa). There are also a few other examples drawn from the earlier strata of grammatical tradition.

STOCK-EXAMPLES—Patañjali states that the sūtras were related to stock-illustrations called mūrdbābhishikta udābaraṇa (I.1.57; I.144). According to Kaiyaṭa they were so called because they were accepted in common by all commentaries (sarva-vṛittish-ūdābṛitatvāt). They formed an essential part of the sūtra explanation, and were sometimes considered so important as to direct the course of subsequent discussion. The illustration sastrī-syāmā on II.1.55 is a case in point, which may be as old as Pāṇini himself, for it was made by Kātyāyana the basis of one of his vārttikas (I.398).

PĀŅINI AS A TEACHER—The title Vritti-sūtra applied by Patañjali to Pāṇini's work (I.371) means that the sūtras of Pāṇini were the subject of a vritti or commentary, which was the result of his own teaching. Kautsa was a well-known disciple of Pāṇini as mentioned by Patañjali (upasedivān Kautsaḥ Pāṇinim, II.115). The Kāšikā adds that he was a resident pupil (anūsbivān) of Pāṇini and was directly instructed by him (upa-śnśruvān, III.2.108). It may be accepted that Pāṇini's explanations (Vritti) formed the model and standard for later commentaries on his sūtras.

Patañjali also makes the interesting assumption that Pāṇini himself was responsible for explaining some of his sūtras to his pupils in two different ways. As an example may be cited the

rule I.4.1, Akadārādekā samijāā. Patanjali enquires why there should be a doubt about the correct wording, and remarks that the Acharya (Panini) had taught his pupils both the alternative readings of the sūtra (nbhayathā byāchāryena sishyāh sūtram pratipāditāh, I.296). Even Kātyāyana was acquainted with the alternative wordings of this rule (cf. vārttikas 1 and 9 on I.4.1.), for which he must have depended on a still earlier source, most likely Pānini's own explanation. In sūtra V.1.50 (Taddharati bhārād-vainisādibhyah), we have an example of the same rule being interpreted by the Kāšikā in two different ways, on the authority of an unnamed commentary (apara vrilti), which occasioned its remark that both the meanings of the sūtra were expounded by Pānini himself to his pupils. (Sūtr-ārthadvayam-api chaitad-āchāryena sishyāh pratipāditāh). The same unnamed commentary (aparā vritti) further provides an alternative, but equally authoritative, explanation of sūtra V.1.94 (Tadasya Brahmacharyam), on which the Kāšikā repeats the same statement (ubbayam abi pramanam ubbayatba sutrapranayanat). The case of sūtra V.4.21 is similar. These instances show that Pănini became the originator of a tradition of sûtra explanation which was handed down through an unbroken succession of Pāṇinīya teachers and pupils following that system (Tadadhite tadveda). We have already seen that in respect of the signs of vowels, nasalisation and svarita accent on them, the Pāṇinīya grammar relied on an oral tradition which must have originated with Pāṇini himself as a teacher (Pratijūānunāsikyāh Pāņiniyāh, and Pratijnā-svaritāh Pāninīyāh, Kāšikā on I.3.2 and 11). Kaiyata's comment on the ślokavārttika, tad-analpa-mater-vachanam smarata (I.4.51; I.335), points to the unbroken continuity of the tradition (agamsya avichebbedam). He also remarks that his own Pradipa commentary on the Bhashya was composed in accordance with the tradition (yath-agamain vidhasye, Introductory Verses).

NATURE OF THE ORIGINAL VYĀKHYĀNAS—Both Kātyāyana and Patañjali admit the necessity of a commentary

(vyākbyāna) to elucidate the words of the sūtras (I.11). The earliest commentaries were of a simple nature intended for the practical purpose of teaching. They comprised the following elements: (1) charchā, or pada-vigraha, splitting up the sūtra into its component parts; (2) udābarana, examples; (3) pratyudāharaņa, counter-examples; and (4) vāky-ādhyāhāra, or anuvritti, repeating the words of a previous sūtra to aid in the meaning of the subsequent sūtra.1 The explanation emanating from the Sūtrakāra or from those nearest to him in time must have been of this simple character. To them should be assigned illustrations like anu-Sākatāyanam vaiyākaranāh (I.4.86), Sākatāyana-putrah (VI.2.133), Nanda-putrah (VI.2.133) referring to both king Nanda and his son, and Nand-opakramāni mānāni 'the weights and measures were first standardised by king Nanda, (II.4.21). The historical value of such early illustrations will be discussed in their proper places.

The antiquity and the genuineness of the Pāṇinian tradition are factors which must weigh with us in assessing the value of whatever commentaries are now left to us. Every commentary should be viewed as a link and a very important link too, in the chain of Pāṇinian interpretation. Dr. Kielhorn examining the question of the earlier authorities quoted in the Mahābhāshya made the significant recognition that 'Kātyāyana was acquainted with the works of other scholars who, before him, had tried both to explain and to amend Pāṇini's grammar, and who had subjected the wording of the Sātras to that critical examination, which is so striking a feature of Kātyāyana's own Vārttikas,' and also that 'between him and Patañjali there intervenes a large number of writers in prose and verse, individual scholars and schools of grammarians, who all have tried to explain and to amend the works of both Pāṇini and Kātyāyana.' (Ind. Ant.,

ग निह सूत्रत एव शब्दाः प्रतिपद्यन्ते, कि तिह, व्याख्यानतश्च...न केवलानि वर्चापदानि व्याख्यानं वृद्धिः बात् ऐच् इति । कि तिह, उदाहरणं प्रत्युदाहरणं वाक्या-घ्याहार इत्येतत् समुदितं व्याख्यानं भवति । भाष्य १.११.

XVI. p. 106). The treatises of pre-Katyayana varttika writers and pre-Patañjali exponents of vārttikas typified by such names as the Bharadvajīvas, Saunāgas, Kunaravadava, Kroshtrīvas, or more faintly symbolised in references like kechid, apare, have become mere shadows. But those ancient masters passed on the fruits of their labours to Kātvāyana and Patanjali. As observed by Kielhorn: 'To what extent Katyayana and Patanjali were indebted to those that went before them, we shall never know; judging from the analogy of the later grammatical literature of India we may, in my opinion, certainly assume, that, like Pāṇini himself, both have based their works on, and have preserved in them all that was valuable in the writings of their predecessors.' (Ind. Ant., XVI. p. 106). This statement from one of the most eminent authorities on Indian grammar in recent times brings out the characteristic feature of the evolution of Indian grammatical tradition from Pāṇini to Patañjali, and the same with equal soundness holds good for the period from Patañiali to the Kāśikā.

#### CHAPTER II

#### GEOGRAPHICAL DATA

#### SECTION 1. INTRODUCTORY

The most important contribution of the Ashţādhyāyī to the history of ancient India is its geographical information. The country, its mountains and ocean, forests and rivers, natural and territorial divisions (janapadas), towns and villages receive their full share of attention in the linguistic material dealt with by Pāṇini. It is here that the grammarian can be credited with having created his material in a very real sense by undertaking an original survey of the place-names in the vast area of the country stretching from Kamboja (Pamir region) and Kāpišī (Begrām in Afghanistan) to Kalinga (Orissa) and Sūramasa (Sūrmā Valley in Assam). The question may be asked as to the raison d'etre of the rich geographical information that a work proclaimed to deal with grammar contains.

The answer to this may be understood in this way. Placenames form an integral part of language which it is the object of grammar to discuss and regulate. The analysis which Pāṇini has given of the underlying meanings which relate names of places to social life and background, shows conclusively that such names do not originate by mere accident, but are the outcome of social and historical conditions with which a people are intimately connected. These conditions are reflected in language in the geographical names. An etymological approach to the place-names of a country reveals to us many a forgotten chapter of history and settlement on land, and the contribution that Pāṇini makes in this respect through his grammatical expositions possesses abiding historical value. He has given a list of endings of place-names by which geographical places are classified. Most of the names of the geographical

places originate, as he points out, from one or the other of the following factors:

- (1) 'this object is found in a particular place;'
- (2) 'the place was founded (nirvṛitta) by such and such a person;
- (3) 'the place was the abode (nivāsa) of such a person, or a community;' and
- (4) 'the place is located in proximity (adurabhava) to a known object.'

It will thus appear that places are here distinguished for their founders, their economic products, their historical associations and their proximity to monuments. These four descriptions are termed *Chāturarthika*, 'suffixes with four-fold meaning'.

Pānini also instances places which have lent their names to persons as the places of their own residence (nivāsa), such as Māthura, or of their ancestors (abhijana, IV.3.90), such as Saindbava, 'one whose ancestors lived in Sindhu'. Besides persons, commodities may also be associated with places as their origin, e.g., the wine (phalaja-madhu) known as Kāpišāyana which was known after the place of its origin called Kāpiśī (IV.2.99). Animals also were called sometimes after the places of their origin, e.g., Rānkava or Rānkavāyana, a bull bred in the Ranku country (IV.2.100); or Kāchchba, a bull of Kachchha country (IV.2.134). There may also be other associations of names with places under the general rule stated in the sūtras IV.2.92145 (Śaishika), e.g., Kāśika, 'the cloth woven at Kāši' (IV.2.116). An assemblage of meanings can be seen in Kāchchhaka which used to denote (a) an inhabitant of Kachchha, (b) the turban (chūdā) peculiar to its poeple, (c) their mannerisms in speech (jalpita) and laughing (basita). The term Saindhava is also cited under this rule with reference to the above peculiarities of its people.

Another class of geographical names is that of regions or provinces (vishaya, IV.2.52-54), called after their peoples, e.g.,

Saiba, the region of the Sibis; Āprītaka, the region of the Āprītas (=Afridis); Mālavaka, the region of the Mālava people. Similarly, Rājanyaka (of the Rājanya tribe), Traigartaka (Kangra), Vāsātika (of the Vasātis or the Ossadioi, Sibi in Baluchistan), Vairāṭaka (Bairāṭ in Jaipur), Audumbaraka, and so forth. The names according to vishaya seem to be based on the ethnic distribution of population over particular areas for the time being without reference to the form of government.

Places were also named after the nature of their polity. Thus Pāṇini divides janapadas into two classes, firstly janapadas under monarchy (Ekarāja) enumerated in sūtras IV.1.168-176; and secondly janapadas as republics (Sangha), such as Vāhīka where flourished the Ayudhajīvī Sanghas (Military Republics).

The suffixes applied to these names point to the types of government (Tadrāja) associated with their names.

This in short illustrates Pāṇini's scientific classification of place-names on the basis of the principles underlying their formation.

Names of rivers, forests and mountains are noticed not in connection with any social or historical significance, but as examples of linguistic peculiarity, such as vowel-lengthening (VI.3.117-120) or cerebralisation (VIII.4.4-5).

Kātyāyana and Patañjali following Pāṇini add more examples to his. For instance, under Sālvāvayava (IV.1.173) Patañjali mentions the names of the states belonging to the Sālva Janapada (*Bhāshya*, II.269); under sūtra IV.1.172 illustrating names of countries beginning with the letter n, Nichaka and Nīpa (II.269); and under the Rājanya gaṇa, Vasāti, Devayāta, Bailvavana, Ambarīshaputra and Ātmakāmeya, which probably go back to Pāṇini himself (IV.2.52; II.282).

### CH. II, SECTION 2. COUNTRY

GEOGRAPHICAL HORIZON—Pāṇini knew of a wider geographical horizon. The extent of the country known to him is indicated by several landmarks mentioned in the sūtras. The western-most point is Prakaṇva corresponding to the term Parikanioi mentioned by Herodotus and to the modern country of Ferghana. It may be noted that Pāṇini names Rishi Praskaṇva in sūtra VI.1.153 and from this name is derived as a counter-example, as given by the Kāśikā, the name of the country called Prakaṇva. To the south of Ferghana lay Kamboja (IV.1.175), which as will be shown later may be identified with the region of Badakshan-Pamir. South of it lay Kāpiśī (IV.2.99), capital of the kingdom of Kāpiśa, which may be identified with modern Kafiristan, south-east of the Hindukush. South of Kāpiśī was situated Gandhāra (IV.1.169) comprising the valley of the Kabul river, with its frontier outpost at Takshaśilā (IV.3.93).

There are also mentioned from west to east janapadas, of (1) Madra (IV.2.131), (2) Uśinara (IV.2.118), (3) Kuru (IV.1.172), (4) Bharata, called also Prāchya-Bharata as the dividing line between north (Udichya) and east (Prāchya) (IV.2.113).

Eastern India is known by its divisions called (1) Kosala (IV.1.171) (2) Kāśi (V.2.116) (3) Magadha (IV.1.170) (4) Kalinga (IV.1.170) and Sūramasa (IV.1.170).

On the west side the country of Kachchha is mentioned (IV.2.133), and also the islands of the adjoining sea (anusamudra dvipa, IV.3.10).

Further up, modern Sind is mentioned under the name of Sauvīra. Pāṇini had a direct knowledge of the country as he shows acquaintance with its social life (formation of its gōtranames) as will be explained later.

The southern limit of his horizon is indicated by the mention of Asmaka (IV.1.173) of which the capital as known from other sources was Pratishthāna, modern Paithan on the Godāvarī.

DIVISIONS OF THE COUNTRY-Udichya and Prāchya are the two broad divisions of the country mentioned by Pănini, and these terms occur in connection with the linguistic forms known to the eastern and northern grammarians. The Udichya country included Gandhara and Vahika, the latter comprising Madra and Usinara, and possibly Trigarta also. The Kuru region in the south-east of the Punjab was contiguous with the Bharata janapada. The Bharata region separated the east from the west, as shown by Pāṇini's reference to Prāchya-Bharata, on which Patañjali remarks that the proper Prāchya country lies outside the sphere of the Bharatas (II.4.66; I.493, anyatra prag-grahane Bharata-grahanam no bhavati). The river Saravatī mentioned in Pānini (VI.3.120) formed according to commentators the boundary between the two divisions of Udīchya and Prāchya. It may probably be identified with the Drishadvatī or Chitāng flowing through Ambala district.

Both Udichya and Prāchya were taken as the home (Lōka) of standard Sanskrit both in Pāṇini's time and earlier. In the time of Patañjali, however, this became contracted to Āryāvarta as the home of the śishṭas (persons proficint in the śāstras) whose language set its norm.

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## CH. II, SECTION 3. MOUNTAINS, RIVERS AND FORESTS

Pāṇini shows knowledge of the mountainous regions called Himālaya, with its perpetual snow (himānī, IV.1.49), its melting (hima-sratha, IV.4.29), uplands (adhityakā) and lowlands (upatyakā, V.2.34). In this connection the expressions Antargiri and Upagiri (with variant forms Antargiram and Upagiram, according to the opinion of āchārya Senaka, V.4 112) are especially noteworthy as proper names also known to the Mahāhhārata, the former signifying Himālaya proper (Antargiri—'Heart of Himālaya'), same as Pāli Mahāhimavant or the Great Central Himālaya including its highest peaks, such as Gaurīśankara, Nandādevī, Kedāranātha, etc., and the latter the sub-Himālayan region of low-lying peaks (Pāli Chulla-Himavant). The Mahāhhārata also adds Bahirgiri, signifying the outlying region of the Tarāi (Sabhā, 27.3).

Pāṇini mentions some particular hills: (1) Tri-kakut (V.4.147) so-called from its three peaks, a name first used in the Atharvaveda as the source of a salve (añjana), which may be identified with the Sulaiman mountain, famous as the source of antimony all over the Punjab and Sind (probably same as Sauvīrañjana; cf. Vedic Index, I.329); (2) Vidūra (IV.3.84) as the source of the precious stone called vaidūrya, cat's eye, which according to Patañjali was quarried at Vālavāya and treated by the lapidaries in Vidūra, probably Bidar (cf. Pargiter, Mārk., p. 365, for Vaidūrya as Satpura); (3) Kimsulakā-giri (VI.3.117), to which the Gaṇapāṭha adds five more names, viz., Sālvakāgiri, Añjanāgiri Bhañjanāgiri Lohitāgiri, Kukkuṭāgiri.

These six names seem to be taken from some Bhuvankosha list, giving in order the ranges on the western frontiers from Afghanistan to Baluchistan.

Starting from below, Śālvakāgiri is phonetically the name of

a/

Hālā Range lying north-south between Sind and Baluchistan. To the west of it is the Makran chain of hills, the home of the Hiṅgulā river and Hiṅgulāja goddess. Hiṅgulā seems to be the Prakrit form of Kiṁśulakā. It was also called by its synonymous name, the Pārada country, Pardene of classical writers, corresponding to Pārdāyana of Patañjali (IV.2.99). Goddess Hiṅgulā of this place is of vermilion colour, also called Dadhiparṇī, because of its association with the ancient Scythian tribes of Dahae and Parnians. It was worshipped also as Nānī, or Nanā of antiquity.

The next great range is that of Sulaiman mountains which as the source of a famous salve was rightly celebrated as Anjanagiri. With the other two ranges of Toba Kākad and Shingar to the west of it, Sulaiman with its triple chain was rightly called Trikakut which seems to have been its Vedic name (Atharva., IV.9.8), also recorded by Pāṇini (V.4.147).

The next step lands us into Afghanistan. Here we have two conspicuous mountainous ranges, viz., one in the northeast of Kabul called Hindukush and the other to the south-west of Kabul called Koh-i-Bābā. The old name of Hindukush was Lohitāgiri (cf. Kāšikā on IV.3.91 where the military highlanders of Rohitagiri are referred), from which Afghanistan in medieval geography was called Roha (Ling. Survey of India, X, p.5). In the route of Arjuna's conquest we read of Lohita with its ten tribes after Kashmir (Sabhā., 27.17). This can apply only to Hindukush and its martial tribes occupying the valleys of Kohistan-Kafiristan.

Sandwitched between the Sulaiman (Trikakut) and the Hindukush (Rohitagiri) we find a little to the west the Koh-i-Bābā range which acts as the central watershed for the dispersal of waters to the south, west, north and east. A glance at the map of Afghanistan points to it most probably as being the Bhanjanā-giri.

The last name Kukkuță-giri seems to represent the comparatively low peaks in the west of Afghanistan towards Herat which in Iranian geography were called *Uparisaena*, "The Falcon's Perch", and by the classical writers Paropamisus, with special reference to their low height.

In sūtra IV.3.91 Pānini mentions peoples who lived by the profession of arms and were settled in hilly regions (Ayudhajīvibhyaschhab parvate). Hridgola, Andhakavarta and Rohitagiri are mentioned as names of particular hills occupied by these military Highlanders. The mention of Rohitgiri suggests their identification with the mountainous tracts in Afghanistan known as Roha, the Tribal Area which is still the recruiting ground of good soldiery. In the Markandeya Purana the home of the Highlanders (Parvatāšrayinah, 57.56) is placed in the region of Nīhāra or Jalalabad (for which the Vāyu gives the true reading Nagarahāra; Pargiter, Mar. P., p. 345). It may be added that Patanjali gives several new names of mountain-dwellers, of which Mālāvat (II.287) is noteworthy as corresponding to Malakand, the mountainous district north of Dargai, the home of the Dargalas in the country south of the Swat river.

FORESTS-Several names of forests are mentioned in sutras VIII.4.4-5. Of these the five names enumerated in the first sutra occur also in the Kötarādi gaņa giving a list of forest names (VI.3.117). Of these the Puragavana seems to be connected with Pataliputra as the Ganaratnamahodadhi associates the Yakshī Puragā with Pātaliputra (verse 291). Miśrakāvaņa appears to be the name of the well-known forest of Misrikh in Sitapur district. The Pāli literature, however, makes Missaka a mythical forest of the Tavatimsa heaven (Jātaka, VI.278; Dict. Pāli Proper Names). The other names, i.e. Sidhrakā-, Sārikā-, Kotarā- and Agrevaņa are unidentified. Similarly names like Śaravana, Ikshuvana, Plakshavana, Amravana, Kārshyavaņa, Khadiravaņa and Piyūkshābaņa included in sūtra VIII.4.5 cannot be definitely identified since Pāṇini takes them both as proper and common names. Some of these proper names are known in Pali works; they may not have been big forests but mere groves of trees situated in the vicinity of big towns. For example, Khadiravaṇa occurs in the Anguttara Nihāya as the birth-place of the teacher Revata who was the foremost of the forest recluses and called Khadiravaṇiya after the place of his birth. Similarly Śaravaṇa is said to have been a settlement in the neighbourhood of Śrāvastī, where another great teacher Gosāla Mankhaliputta was born. Amravaṇa is said to have been attached to the city of Rājagriha, and also Kāmpilya.

Forests of herbs and big trees (Vibhāshaushadhi-vanaspatibhyaḥ, VII.4.6) and those reserved for the grazing of cattle (goshpada, VI.1.145; āśitam-gavīna aranya, V.4.7) are also mentioned.

RIVERS-On the north-west frontier Panini mentions the river Suvāstu (IV.2.77; Swat). This river with its tributary the Gauri (mod. Panjkora) flowed through Gandhara of which the upper part was known as Uddiyana, famous for its blankets called pandu-kambala, mentioned by Panini (IV.2.11). The western capital of Gandhāra was Pushkalāvatī which is identified with modern Charsadda a little above the junction of the Swat with the Kābul river. The Kāšika mentions Pushkarāvatī as the name of a river in three sūtras (IV.2.85; VI.1.219; VI.3.119) along with certain other names as Udumbarāvatī, Vīraņāvatī, Maśakāvatī. Of these Maśakāvatī seems to be identical with the name of the river on which Massaga or Massaka, capital of the warlike people known as the Aśvakāyanas was situated. It is possible that Pushkalavatī and Maśakavatī were the designation of only those particular portions of the river Swat where it flowed past by these two great towns of Gandhara in the south and north respectively. It may be added that Patañjali mentions Udumbarāvatī, Maśakāvatī, Ikshumatī and Drumatī definitely as names of rivers (II.287). Of these Udumbarāvatī may have flowed through the country of the Audumbaras, and Ikshumatī (also included in the Madhvādi group, IV.2.86) is identical with a tributary of the Ganges referred to as Oxymagis by Arrian and now known as Ikhan (also Kālindī) flowing through Farrukhabad district.

The next great river mentioned in the north-west is the Sindhu after which the country to its east was named Sindhu, the present Sind-Sagar Doab (IV.3.93). Taking its rise from the snows of western Kailasa in Tibet, the Sindhu first flows north-west for about half of its length, and then reaching the Darad country in the north-west of Kashmir and south of Little Pamīr it takes a southward course along which lay its most famous places. A geographical feature of the Indus descending from the defiles of Dardistan is expressed in the grammatical formation Dāradī Sindhuh, naming it after its immediate source (Prabhavati, IV.3.83). Emerging from the Darad highlands the river enters the Gandhara country with Swat or Uddiyana on its right and the ancient janapada of Uraśa (mod. Hazara in N.W.F.P.) on its left until it receives its most important western tributary the Kabul river at Ohind, a few miles north of Attock where it is at present crossed by a bridge. Ohind was the ancient Udbhānda, the place of transhipment of goods across the Sindhu and the spot where the great northern trade-route called Uttarapatha in sūlra V.1.77 crossed the river. Pāṇini's own birth-place, Śalātura was a riparian town of the Indus situated at a distance of only about four miles from Ohind in the angle of the Kubhā and the Sindhu. About sixty miles east of Ubhāṇḍa was Takshaśilā, the eastern capital of Gandhara, and at an equal distance to the west was Pushkalāvatī (mod. Charsadda), its western capital. The trans-Indus country was known in ancient times as Pare-Sindhu (Sabhāparva, 51-11). Its famous breed of mares imported into India is mentioned by Pāṇini as Pāre-vadavā, 'the mare from beyond the border' (VI.2.42).

Varnu, corresponding to Bannu on the other side of the river is mentioned in a sūtra, and also Gana-pāṭha. The Bannu valley is drained by the rivers Kurram (Vedic Krumu) and the Gambila or Tochi which unite and flow into the Indus. The

Kāśikā commenting on sūtra IV.2.103 speaks of Varnu deśa named after the river Varnu (Varnur-nāma nadas-tat-samī po deśo Varnub). It appears that the Kurram river after it left the Kurram Agency and from the point where it enters the Bannu valley was named Varnu in ancient days. The place situated in proximity to Varnu is mentioned as Varnava (IV.2.77, gana Suvāstvādi). Although Bannu (Edwardesabad) is a modern town founded only in 1848, the valley after which the town was named is mentioned in ancient texts. Opposite Varnu, across the river, was situated the famous Kekaya janapada mentioned in sūtra VII.3.2, comprising parts of the three modern districts Ihelum, Guirat and Shahpur, adjoining which lay the Salt Range (Saindhava). To south of Kekaya was situated the Sindhu janapada lying north to south between the rivers Ihelum and Indus. Along the lowermost course of the river Sindhu was situated the ancient Sauvira janapada (IV.1.148), now known as Sind.

Of the rivers of the Punjab, Pāṇini mentions Vipāś (Beās) and the wells dug on its north side (*Udak cha Vipāśaḥ*, IV.2. 74). The northern wells were more stable as being on high and dry ground than those on the other side and the former were therefore distinguished by the peculiar accent on their names.

Pāṇini names two other rivers, Bhidya and Uddhya (Bhidy-ōddhyau nade, III. 1. 115). Uddhya is the same as Ujh flowing through Jasrota district and falling into the Rāvi (Imperial Gazetteer of India, Vol. XV, p. 73; located to the north-west of Mādhopur on the Rāvi, p. 107). On Pāṇini II.4.7 the Kāšikā illustrating the compound names of two rivers cites the example Uddhy-Erāvati, that is Uddhya and Irāvatī, the former of which we must consider as a tributary of the latter on the analogy of Gangā-Sonam, another example of the same rule, and of the counter-example Gangā-Yamune. Bhidya may be identified with a river named Baī, rising in Jammu about 15 miles to the west of Ujh, and flowing into the Rāvi in the

Gurdaspur district. The names Uddhya and Bhidya suggest that they dried up in summer but flowed in torrents in the rains, as indicated by Kālidāsa who describes their brisk and wayward movements as those of lusty youths like Rāma and Lakshamana (Raghuvaniśa, XI.8):

on its bank (Dāvikā-kūla, VII. 31.1), which Patañjali describes to be śāli rice (III. 316). Pargiter rightly identified it with the river Deg (Mārk. Purāṇa, p. 292). According to the Vishnudharmoitara Purāṇa (I.67.15) the Devikā flowed through the Madra country, and joined the Ravi according to the Vāmana (ch. 84). Rising in the Jammu hills, the Deg flows through Sialkot and Sheikhupura districts and joins the Ravi. In each rainy season it deposits on its banks layers of rich alluvium soil which produce rice of fine quality that are famous all over the Punjab and exported from Muridke and Kamoke towns. (cf. Jagannath Agarwal, On the Identification of the Devikā, JUPHS, 1944, Pt. II, pp. 76-79).

Pāṇini mentions another river Ajiravatī (VI.3.119) the Achiravatī of Pāli texts (modern Rapti) on which stood Srāvastī. The next river mentioned in this region is Sarayū (VI.4. 174) of which the Rapti is a tributary. It may be noted that Sarayū was also the name of a river in remote Rigvedic India flowing past Herat (derived from Hari-Rūd; cf. Old-Persian Harayū from Vedic Sarayū). Darius I (516 B.C.) in his inscription mentions Haraiva, the people of Harayū, equal to Pāṇini's Sārava. In the Elamite version of the Behistun inscription occurs the name Arriya (=Haraiva=Gk. Aria with its capital at Heart).

Another river Rathaspā is mentioned in the Gaṇa-pāṭha to sūtra VI.1.157 (Bhāshya, III. 96, Rathaspā nadī). This name occurs in the Jaiminīya Brāhmaṇa (Caland, JB., Extract 204) and in the Ādiparva (172.20) where it is one of the seven sacred rivers between Sarasvatī on the one side and Gaṇḍakī on the other. Most probably it was a river of Pañchāla and the name

may correspond to Rhodopha which is mentioned by the Greek writers as marking an important stage on the great royal road from the frontier to Pataliputra. Rhodopha is stated there to be 119 miles from the Gangā; although it is called a town but the mention of the stages generally between two well-known rivers as Jhelum and Beas, Sutlej and Jamna, suggests its having been the name of a river (Megasthanes, Fragm. LVI; Rawlinson Intercourse between India and the Western World, p. 64). the distance of 119 miles lands us on the banks of the Rāmagangā which is the only big river between the Ganga and the Sarayū to present difficulties of crossing so as to merit the name Rathastha, given to it in the Vedic period, and which is still in its upper course known as Ruhut or Ruput (Imp. Gazetteer, U. P., I.166). The distances from Hastinapur on the Ganga to Bareilly on the Rāmagangā, and from Bareilly to Kanauj where the Rāmagangā falls into the Gangā, are equal to the stages of the Royal Road mentioned by Megasthenes from the Ganga at Hastinapura to the town of Callinipaxa identified with Kanauj as the river Kālindī joins the Gangā near it.

Rathaspā or Rathasthā as the name of a river occurs as an independent sūtra in the Riktantra Prātišākbya (sūtra 209).

Sarāvatī is mentioned in sūtra VI.3.120 (Sarādīnām cha). Several rivers lay claim to this name (cf. Dey's Geog. Dict.), the most famous one was that which separated the Udīchya from the Prāchya country already noted.

Of the rivers of Central India (now Vindhya-Pradeśa) Pāṇini mentions Charmanyatī (Chambal, VIII.2.12).

Păṇini uses the term Rumanvat, which the Kāśikā connects with a place producing salt (Lavaṇa-śabdasya rumaṇa-bhāvo nipātyate). The form Rumanvat may have been based on the name Rumā, a river or lake in the district of Sambhar in Ajmer which is also the source of the river Lūnī.

DESERT REGIONS — Pāṇini mentions a desert region as dhanva (IV.2.121), of which two examples are cited by Patañ-jali, viz. Pāre-Dhanva and Āshṭaka (II.298), and another by

the Kāšikā as Airāvata. Pāre-dhanva literally means 'across the desert,' which seems to refer to the region called Thar-Parkar to the west of the Marusthala desert of Rajasthan. Ashṭaka-dhanva seems to be the name of the desert region of the Attock district which is called Dhanni, probably from dhanva. East Gandhāra included the desert of Attock and the hilly tracts of Rawalpindi called Prith Janapada, both of which are preserved in the joint name Dhanni-Pothowar. The Bhīshma-parva (VI. 7) places Airāvata-varsha beyond the Sītā or Yarkand river in Chinese Turkestan where we may look for Airāvata Dhanva in the desert regions of Central Asia.

## CH. II, SECTION 4. JANAPADAS

An important geographical term used by Pāṇini is Janapada, which was both a state and a cultural unit, its culture counting more than its geography. Its cultural integrity was reflected and preserved in the manners, customs and above all the dialect of its people. The citizens of the same (samāna) janapada were called sajanapadāḥ (VI.3.85). The janapadas known to Pāṇini are the following:—

1. Kamboja (IV.1.175). Gandhāra, Kapiśa, Bālhīka, and Kamboja are the four janapadas the positions of which should be clearly understood. Of these Gandhara extended from Takshasila, its eastern capital, to the river Kunar, its western boundary, and from the river Kabul in the south to Swat in the north. Next to it was the kingdom of Kapiśa coinciding with modern Kafiristan and occupying the whole area between the river Kunar and the Hindukush. The latter mountain identified as Rohitāgiri separated Kapiśa from Bālhīka. Sometimes Kapiśa politically formed part of Gandhara, as in the reign of Darius, and then the name Gandhara was applied to both of them. In none of these three janapadas can Kamboja be included. It stands as a separate janapada, which Lassen correctly identified with the head-waters of the Oxus comprising the Ghalcha-speaking areas of Pamir.

This identification is also supported by important linguistic evidence, viz. that the root sava 'to go' which was noticed by Yāska as a peculiarity of Kamboja speech (Savatir-gatikarmā Kambojeshveva bhāshyate, Nirukta, II.2), is still current there. (Cf. Grierson, Linguistic Survey of India, Vol. X, pp. 468, 473, 474, 476, 500, etc; Jayachandra, Bhārata-Bhūmi, pp. 297-303). The Kambojas are known as Kambu-

jiya in the Old-Persian Inscriptions. In the Aitareya Brāhmaņa the Uttarakurus and the Uttaramadras are described as living beyond the Himālaya (VIII.14); and in the Vainša Brāhmaņa Kāmboja Aupamanyava is spoken of as a pupil of Madragāra, from which the Vedic Index postulates a possible connection of the Uttaramadras with the Kambojas, who probably had Iranian as well as Indian affinities, (Vedic Index, I.84, 138 cf. also Jean Przyluski, An Ancient People of the Punjab: The Udumbaras, Journal Asiatique, 1926, p.11 showing that Bālhīka was an Iranian settlement of the Madras; Bālhīka-Uttaramadra).

- 2. Prakaņva. The name is a corollary to Praskaņva in sūtra VI.1.153 and is stated by the Kāšikā to have been a country (deŝa). It should be identified with the people mentioned by Herodotus as Parikanioi, (modern Ferghāna, Sten Konow, Kharoshṭhī Ins., p. xviii) who are said to have formed part of the empire of Darius. Prakaṇva was thus situated immediately to the north of Kamboja or the Pamir region.
- 3. Gandhāra. Pānini mentions both the Vedic form Gandhari as the name of the janapada and its people in sūtra IV.1.169, and its later form Gandhara in the ganas to IV.2.133 and IV.3.93. Gandhara extended from the Kabul Valley to Takshasilā. Two towns of Gandhāra are mentioned, viz. Takshasila, its eastern capital, and Pushkalavati, the western. The latter occurs in a gana as the name of a river on which the town stood. The Greeks refer to it as Peucelaotes (modern Charsadda, situated near the junction of the Swat with the Kābul). The Pushkalas of the Mārkandeya Purāna must be the . people of this region. The country between the rivers Suvastu and Gaurī was known as Uddiyāna which Kātyāyana mentions as Aurdāvana (Bhāshva, IV.2.99; II.292). It was considered in ancient days a part of Gandhara. A special variety of blankets known as pāndu-kambala (IV.2.11) was a product of Gandhara. Gandhara is also known to the Atharvaveda for its wool.

- 4. Sindhu. Sindhu was originally the name of the river, which gave its name to the whole country. The term Sindhu was corrupted to Hi(n) du in the Old Persian inscriptions of Darius I (516-485 B. C.) and to Indus by the Ionian (=Pāṇini's Yavana) Greeks. Sindhu as a janapada may be identified with Sind-Sāgar Doāb, the region between the Jhelum and the Indus. Most of it is now the sandy desert of Thal.
- 5. Sauvīra (IV.1.148). Pāņini mentions Sauvīra and gives valuable social history of the region. It was the home of many gotras of which he names two, Phāṇṭāhṛiti and Mimata, and the Kāšikā following an old tradition adds Bhāgavitti, Tārṇabindava, Akašāpeya, Yamunda and Suyāmā. Bhāgavitti is also mentioned by Patañjali (II.243) and may be identified with the present Bugti tribe on the northern border of Sind, numbering about thirty thousand. Pāṇini mentions Śarkarā or Śārkara (modern Sukkur on the Indus) as a town (IV.2.83) The name was suggested by its proximity to the rocky region (śarkarāyāḥ adūrabhavaḥ) on the borders of which Sukkur is situated.

Pāli literature mentions Rauruka (modern Rori in Upper Sind) as the capital of Sauvīra.

6. Brāhmaņaka. It is mentioned in Pāṇini's sūtra V.2.71. Patañjali definitely calls it a janapada (Brāhmaṇako nāma janapadaḥ, II.298). The significance of its name is brought out by the Kāśikā, which describes it as the land of Brahmins who were āyudhajīvins or followers of military art, (yatrāyudhajīvino Brāhmaṇāḥ santi). Their military traditions continued up to the time of Alexandar whose invasion they resisted with patriotic heroism (Plutarch, Alex., 59). The Greeks call them Brachmanoi and locate them in middle Sind (Arrian, VI.16), of which the capital is still called Brahmanabad (Cunningham, Ancient Geog., p. 310).

It may be noted that even Rājašekhara (9th century A. D.) names Brāhmaṇavaha ('abode of Brāhmaṇas') as one of the janapadas of the west. The Muslim geographers called Brah-

manabad as Bahmanwā after this old tradition.

It may be noted that Patañjali mentions two formations a-Brāhmaṇaka and a-Vṛishalaka as names of countries (I.301), corresponding to Śaudrāyaṇa and Brāhmaṇaka respectively.

Śaudrāyaṇa or the Śūdra country is mentioned along with other names in the gaṇa Aishukāri (IV.2.54) which denoted names of countries after their peoples (Vishayo deśe). Like the Brāhmaṇas, the Śaudrāyaṇas (=Greek Sodrae) also are mentioned as having opposed Alexandar. Cunningham treats the present Soḍā Rajputs of south-east Sind around Umarkot as their descendants (Ancient Geog., p. 291). Diodorus couples the Sodrae with the Massanae as occupying the opposite banks of the Indus. Cunningham equates the Massanae with the Mansarnaioi of Ptolemy, which name corresponds to the Masūrakarṇa (derivative Mausurakarṇa) of the Gaṇa-pāṭha (II.4.49; IV.1.112).

- 7. Apakara. This name is mentioned along with Sindhu in sūtra IV.3.32, to explain the forms Apakaraka and Apakara, denoting its products. It may be identified with Bhakkhar on the Indus in Mianwali district.
- 8. Pāraskara (VI.1.157). This is mentioned in the gaṇa Pāraskara-prabhṛiti. Patañjali treats it as a country (Pāraskaro deśaḥ, III.96). The name corresponds to Thara-Pārkara (Thara being the Sindhi form of Thala meaning dry country or desert, as opposed to Kachchha or jāngala country), one of the biggest districts of Sindh which once denoted the whole of its south-eastern part up to the coast of the Great Rann of Kachchha or Kachchha-Iriṇa.

The Riktantra takes the name Pāraskara as that of a mountain, and the term Pārakara for non-mountainous region, such as the Thar-Parkar district (Pāra parvate, IV.5.10, Suryakant's edition, p. 41).

 Kachchha (IV.2.133). Kachchha represented the water-logged portions in the south as against the dry desert area in the north. Kachchha was historically connected with Sindh forming its province in the seventh century when Yuan Chwang visited the country. Cunningham says that Kachchha and Parkar have always been linked together (Anc. Geog., p. 347). Pāṇini also refers to the names of towns ending in Kachchha (IV.2.126), which were mostly situated along the coast from Bhṛigu-Kachchha to the province of Kachchha. The inhabitants of the Kachchha janapada were known as Kāchchhaka, and a reference to their peculiarities in speech, laughing and dress has already been noted.

- 10. Kekaya (VII.3.2). The descendants of the Kshattriyas of the Kekaya janapada were known as Kaikeya. The ancient Kekaya janapada consisted of the territory now comprised in the three districts of Jhelum, Shahpur and Gujerat.
- 11. Madra (IV.2.131). Madra was a part of the Vāhīka country, as already seen, with its capital at Śākala, modern Sialkot. Pāṇini mentions two divisions of Madra, Pūrva (Eastern) and Apara (Western) (Diśo'Madrāṇām, VII.3.13; also IV.2.108). Pūrva-Madra extended from the Ravi to the Chenab and Apara-Madra from the Chenab to the Jhelum.

In the Mabābhārata Śākala is mentioned as the chief city of the Vāhīkas on the Āpagā river. Patañjali also mentions Śākala as a Vāhīka-grāma (IV.2.104; II.294; cf. also Kāšikā, IV.2.117). Pāṇini does not explain the derivation of the name Vāhīka. Kātyāyana, however, derives it from babis, 'outside,' with the suffix īkak (IV.1.85.5). This seems to agree with the epic description of Vāhīka as the country of five rivers but lying outside the pale of Aryan society (dharma-bāhya), devoid of religion (nashṭa-dharma) and impure (asuchi) Karṇaparva, 44.7.32).

12. Ušīnara (IV.2.118. Pāņini mentions Ušīnara as a part of Vāhīka (cf. Kāšika on IV.2.118, Ušīnaresbu ye Vāhīka-grāmāh). In the Gopatha Brāhmana the Ušīnaras are regarded as northerners (II. 9, Šavasošīnaresbu Udīchyeshu).

Thus Pāṇini names three divisions of the Vāhīka country, viz. Kekaya, Ušīnara and Madra to which is to be added the fourth division Śavasa. Of these Kekaya and Śavasa may be located between the Jhelum and the Chenab, the first in the south and the second in the north respectively, and Madra and Ušīnara between the Chenab and the Ravi in the north and south respectively. The divisions become clear on the map.

The Divyāvadāna refers to the Śvasas in Uttarāpatha with headquarters at Takshaśilā to which Aśoka was deputed by his father Bindusāra as Viceroy to quell their rebellion. The name Śavasa or Śvasa seems to be preserved in the modern name Chhibha comprising Punch, Rajauri and Bhimbhara. In literature the Ušīnaras are often associated with the Śibis (Gk. Śiboi) whose chief town Śibipura has been identified with Shorkot, headquarters of a Tehsil in the Jhung district.

- 13. Ambashtha. It is mentioned by Pāṇini in sūtra VIII.3.97, and is stated by Patañjali to be implied in sūtra IV.1.171 as the name of a janapada under a monarchy. The Mahābhārata locates them in the north-west and describes them as a kingship. The Ambashthas may be taken as Gk. Abastanoi or Sambastai on the lower course of the Chenab (Invasion of Alexander, p. 155).
- 14. Trigarta. It is mentioned by Pāṇini as an Āyudhajīvī Sangha, and a Confederation of Six States known as TrigarataShashtha (V.3.116). The Trigarta country, although in itself
  marked out by natural boundaries from the rest of the province,
  was partitioned into smaller territorial divisions or janapadas.
  The name Trigarta denotes the region drained by the three
  rivers, Ravi, Beas and Sutlej, and corresponds to the Jālandhar
  group of states which had retained their geographical identity
  all these years. Jālandharāyaṇa is mentioned in the Rājanyādi
  group (IV.2.53).

Patañjali mentions Pātānaprastha as a Vāhīka-grāma (II.298). It may be identified with Paithan or Pathānkot, situated at the entrance of the Kangra valley and at one time the capital of the Audumbaras (Cunningham, A.S.R., XIV, p. 116; also V,p. 153).

The central portion of Trigarta formed by the valley of the Beas was also named Kulūta (same as Ulūka of the Sabhāparva, 27.5-16), now known as Kulū. Its ancient capital was at Nagara on the Beas, a name included in the Katryādi gaṇa (IV.2.95).

Maṇḍamatī (Yavādi gaṇa, VII.29) was perhaps modern Maṇḍi, lying to the south of Kulūta. Pāṇini makes special mention of the Bhārgāyaṇa gotra in the Trigarta country (IV.1.111).

- 15. Kalakūṭa (IV.1.173). It is mentioned as a janapada under a king. The Sabhāparva calls it Kālakūṭa and makes it a part of Kulinda (Kulinda-vishaye, 26.3) which was conquered by Arjuna. Pāṇini's Kuluna (Gaṇa-pāṭha, IV.2.133 and IV.3.93) seems to be the same as Kulinda and later Kuṇinda. Kulinda (Gk. Kulindrini) was known to Ptolemy as an extensive country including the region of the lofty mountains wherein the Beas, the Sutlej, the Yamunā and the Gaṅgā had their sources (McCrindle, Ptolemy, p. 105, 109). The Kalakūṭa lay somewhere in this area, with possible traces of its name in modern Kalka in the Simla hills.
- pada and a kingdom. He also mentions the town of Hāstina-pura (VI.2.101), which was its capital. The region between the triangle of Thaneshwar, Hisar and Hastinapur was distinguished by three different names: Kuru-rāshṭra proper between the Gaṅgā and the Yamunā with its capital at Hastināpura; Kurujāṅgala equal to Rohtak, Hansi, Hissar; and Kuru-kshetra to the north with its centre at Thaneshwar, Kaithal, Karnal. The Kāśikā mentions all the three as distinct geographical units (Kuravaścha Kurukshetram cha Kuru-Kurukshetram, Kuravaścha Kurujāṅgalam cha Kuru-Kurujāṅgalam, II.47). The name Āsandīvat, the place with the king's throne where Jana-

mejaya Parīkshit is stated in the Mahābhārata to have performed his sacrifice, is also noticed by Pāṇini (VIII.2.12). Pāṇini also refers to the householders' way of life obtaining amongst the Kurus (Kuru-gārhapatam, VI.2.42) as against the ascetic way. It seems to be akin to the Kuru-dhamma of the Jātaka of that name which insisted on the purity of family life and the cultivation of proper domestic relations and virtues (Kurudhamma Jātaka, Vol. III, No. 276), a way of life and philosophy that are reflected in the basic doctrine of the Bhagavadgītā expounded in Kurukshetra.

17. Sālva. Pāṇinī mentions Sālva (IV.2.135), Sālveya (IV.1.169) and Sālvāvayava (IV.1.173) as three distinct jana-pada units which were monarchies. Of these Sālva seems to have been the parent state, Sālveya equal to Sālvaputra, a collateral branch, and Sālvāvayava, a bunch of kingly states which the enterprising Sālvās either brought under their conquest or planted during the course of their colonising activity. The last although confined to a limited geographical horizon in the central and north-eastern Punjab, were in relation to each other not geographically contiguous.

The Sālva is mentioned as a pair janapada with Matsya as early as the Gopatha Brāhmaņa (I.2.9) and also in the same group in the Mahābhārata (Bhīshmaparva, 10.3) where the Sālvas, the Mādreyas and the Jāngalas are juxtaposed. Matsya with its capital at Virāṭa (Bairāṭ in Jaipur) provides a fixed point and Sālva should be located near that region. Making allowance for the position of the other known janapadas, the only place left for Sālva coincides with the territory extending from Alwar to north Bikaner. It may be mentioned that the Sālvas were an ancient people who seem to have migrated from the west through Baluchistan and Sindh where they left traces of their name in Śālvakā-giri (mentioned by Pāṇini in the Gaṇa-pātha to VI.3. 117), the present Hālā mountain, and then advancing towards north Sauvīra and along the Sarasvatī finally settled in north Rajasthan. Of their intrusion towards

the Yamunā some dim intimation is preserved in an old Vedic verse.1

Sālveyaka. The Sālveyakas are mentioned as a separate people in the Mahābhārata, grouped with the Matsyas in their fight with king Suśarmā of Trigarta (Virāṭaparva, 29. 2). They must be the same as Sālvaputra mentioned in the Udyogaparva (4.24) amongst kings to whom the Pāṇḍavas were to send emissaries. The name Sālvaputra may still be traced in Alwar, which is in the same geographical sphere. The Sālveyas stood in relation to the Sālvas as the Mādreyas to the Madras (Bhīshmaparva 10.37).

Sālvāvayava. Of the several member states grouped in the Sālavavayava confederacy, the Kāšīkā mentions six, viz. 1. Udumbara, 2. Tilakhala, 3. Madrakāra, 4. Yugandhara, 5. Bhūlinga and Śaradanda (IV.1.173).

Udumbara. The Udumbara (also Rājnyādi group, IV. 3.53) territory is fixed by the find-spots of their coins in the Kangra valley, between the Ravi and the Beas, and at Pathankot in Gurdaspur district at its mouth (Allan, Coins of Ancient India, Intro.p. lxxxvii). Udumbarāvatī as a river-name (Bbāshya, IV.2.71; II. 287) might be some tributary flowing through the Udumbara country on which the town of the same name was situated.

Tilakhala. Looking at the map of this region we find that the area south of the Beas comprising Hoshiarpur district, where even today sesamum forms the main crop should be indentified with Tilakhala ('the threshing-floors of tila'). Thus Tilakhala and Udumbara were immediate neighbours, and the former appear to be the same as the Tilabhāras of the

<sup>&</sup>lt;sup>1</sup> Yaugandharireva no rājeti Sālvīr-avādishuh, Vivritta-chakrā āsīnāstīreņa Yamunē tava.

<sup>&#</sup>x27;The Sālva women turning their wheels and sitting on thy banks, O Yamunā, have told us that their king is a Yaugandhari.' (Un ancien peuple du Panjab: Les Sālva, Journal Asiatique 1929, (pp. 311-354) p. 314). Keith considers a reference to war-like raid more plausible.

epic (Bhīshmaparva, 10.51)1.

Madrakāra. The Madrakāras, as pointed out by Prof. Przyluski, signifies the warrior-troops of the Madras (Les Salva, Journal Asiatique, 1929, pp. 311-354; from old Persian kāra meaning 'army'). Their connection with the Sālvas was the outcome of an important event in the history of the two peoples, viz. the marriage of the Madra princess Savitri with the Salva prince Satyavan (Vanaparva, 279.15). It appears that consequent to this marriage three new small kingdoms came into existence for which distinct names have been preserved, e.g. 1. Sāvitrīputrakāh, 2. Madrakārah and 3. Śālvasenyah. The first represented the hundred sons of Savitri and Satvavan mentioned both in the Mahabhārata (Vanaparva, 283, 12; Karnaparva, 4.47) and in the Gana-patha (V.3.166, Damanyādi gana). Putra denoted a clan as in the names Kehar-potre, Chanan-potre, etc. amongst the Arora Khattris of the Punjab, or in such old designations as the Śākyaputras. The Madrakāras and the Śālvasenayah (Skt. senā corresponding to Iranian kāra; Bhishmaparva 10.59), were smaller kingdoms of such warrior chiefs as were lent both by the Madras and the Salvas in order to rehabilitate Sāvitrī and Satyavān who were bereft of their kingdom and married in exile.

Madrakāra and Bhadrakāra appear to be variants of the same name (madra=bhadra, sūtras II.3.73 and V.4.67). It seems that Bhadra situated on the Ghaggar near the north-eastern border of Bikaner marks their old home.

Yugandhara. Yugandhara should be some where in the region of the Yamunā, since the Sālva women spinning on its banks, as mentioned above, invoked Yaugandhari as their king. It may be located in Ambala district between the Sarasvatī

<sup>&</sup>lt;sup>1</sup> Vulgate 9.53; Poona edition gives tilakāb in the text and Tilabhāra in the foot-note.

<sup>&</sup>lt;sup>2</sup> Vulgate 9.61. Poona edition gives Sarvasenyah in the text and Śālvasenayah in the foot-note. For Sarvasenayah cf. Pāṇini, V.3.116; Kāšīkā, VIII.1.5.

and the upper Yamuna, where Jagadhari, probably is a relic of the old name.

Bhūlinga. The Bhūlingas should be identified with the Bolingae of Ptolemy settled in the north-west of the Aravallis. Bhūlinga seems to be the same as Kulinga mentioned in the Mahābhārata (Bhīshmaparva, 10.38)<sup>1</sup> and the Rāmāyaṇa on the route connecting Sāketa and Kekaya at the point where the Śaraḍaṇḍā river was crossed (Ayodhyākāṇḍa, 68.16).

Saradanda. The Saradandas must have been settled along the Saradanda river mentioned above. Nothing is known about it, but the first part of the two names Saradanda and Saravatī points to their being one and the same river. The latter formed the boundry between the Prāchya and the Udīchya divisions of India and may be identified with the Drishadvatī or Chitāng.

Ajamidha and Ajakranda. Patañjali adds to this list three other names, viz. 1. Bodha, 2. Ajakranda and 3. Ajamidha. (IV.1.170; II.289). The prefix Aja in the last two names has reference to a local cult deity Asura Ajaka with whom king Sālva was identified as its incarnation (Adiparva, 61.17).<sup>2</sup>

Bodha. The Bodhas occur also in the list of the Bhīshmaparva (10.37-38) in the same group as the Kulingas, the Sālvas and the Mādreyas. Patanjali also mentions them along with the Udumbaras (II.4.58; I.489).

An important economic feature of the Salva country was its special breed of bulls mentioned as Salvaka by Pāṇini (IV.2.136). The Salva janapada also provided recruits for the infantry known in those days as Sālvā padāti (IV.2.135).

<sup>1</sup> The critical edition records Kalinga in the text and Kulinga in the foot-note; but all the janapadas in this list e.g. Salva, Madrey, Jangala, Surasena, Bodha and Kuru-Panchala being of the Punjab-Rajputana region, the original reading must be taken to be Kulinga and not Kalinga, as supported by a Kashmir MS. also.

<sup>2</sup> Vulgate 67.17; Poona edition gives malla in the text and Salva in the footnote.

Pāṇini further mentions a particular item in the Sālva dietary, the porridge known as Sālvikā yavāgū made of barley, which is still a favourite food of the people in Bikaner and Jaipur states, i.e. the area which was formarly the Sālva janapada.

18. Pratyagratha (IV.1.173). It is the name of a janapada in Pāṇini. While Pataṇjali and the Kāśikā are silent on this name, we have the later authority of Hemachandra referring to the Pratyag-rathas as belonging to the Ahichchhatrā region (Abhidhānachintāmaṇi, 4. 22). It may be noted that Pāṇini mentions the river named Rathasthā (=Ruhut or Rāmagaṇgā), 'that which brings the chariot to a halt,' a meaning suggested by Pratyagratha also. It may be taken as the 'chariot' of Aryan advance marching towards the east.

19. Ajāda (IV.1.171). Nothing is known about this janapada. It is connected with the grazing of goats. It may be taken to be the Etawah district, the region between the Chambal and the Yamunā, famous for its goats (Hindi

jamnāpārī bakrī).

20. Rainku (IV.2.100). Pāṇini uses the term Rāṅkavaka for a native of Raṅku. He also mentions the terms Rāṅkavāvayaṇa and Rāṅkava to indicate what was non-human, as examples of which the Kāṣikā mentions the Rāṅkavāyaṇa bull and the Rāṅkava blankets. It may be noted that Rangka is the name of a language used in parts of Almora district (Moti Chandra, Indian Costume, Bhārtīya Vidyā, Vol. I, p. 46, footnote; for the Rangka language see, Linguistic Survey of India, Vol. III, pt. I, p. 479). So the Raṅku janapada may have been located in this region which was the home of woollen blankets. The area of ancient Raṅku must have been much bigger than at present.

21. Bhāradvāja (IV.2.145). The Kāsikā states clearly that Bhāradvāja in this sūtra is not a gortra name but a country. As Pargiter has remarked Bhāradvāja is often mentioned in the Mahābhārata in connection with the upper part of the Ganges near the hills, and the Bhāradvājās were the people living in

Garhwal (Mārk. Purāṇa, p. 320). Pāṇini mentions the Ātreyas as a division of the Bhāradvājas (Gaṇa-pāṭha Aśvādi, IV.1.110, Ātreya Bhāradvāje), and the Mahābhārata and the Mārkandeya Purāṇa also group them together.

- 22. Kosala (VI.1.171). As seen above this figures as one of the sixteen Mahājanapadas of the Pāli texts. Its town Śrāvastī is mentioned by Pāṇini in a Gaṇa-pāṭha; also the two terms Sarayū and Ikshvāku in sūtra VI.4.174. Patañjali mentions Ikshvāku as a janapada (IV.2.104; II.298) which was obviously the same as Kosala.
- 23. Kāśi (IV.2.116). Pāṇini does not mention Kāśi as an independent monarchy like Kosala, and Magadha. The omission may be accidental, or due to political reasons reflecting the condition when Kāśi lost its separate identity and was under the control of Magadha. Pāṇini also mentions the term Vārāṇasī (the capital of the Kāśi janapada) in a gaṇa IV.2.97, and its citizens as Vārāṇaseya.
- 24. Vṛiji (IV.2.131). It was the name of a janapada. Its citizens were called Vṛijika.
- 25. Magadha (IV.1.176). It was a famous monarchy in Păṇini's time, as we know from other sources. A Kshattriya descendant of the Magadha tribe was termed a Māgadha.
- 26. Kalinga (IV.1.170). Pāṇini mentions Kalinga as a janapada with a monarchy. Probably in his time the boundaries of Kalinga and Magadha touched each other.
- 27. Sūramasa (IV.1.170). As already noted this janapada may be identified with the Sūrmā Valley and Hill District of Assam.
- 28. Avanti (IV.1.175), an independent janapada with a monarchical government. Its capital Ujjayinī is referred to in the Gaṇa-pāṭha (IV.2.82; IV.2.127).
- 29. Kunti (IV.1.175). Patañjali instances Kunti and Avanti as janapada names ending in short i and implied in sūtra IV.1.171. The Mahābhārata speaks of Kunti as the region through which flowed the Aśva Nadī (Vanaparva,

308.7), a tributary of the Chambal (Dey, Geog. Dict., p. 109). Kunti must be identified with the region of Kontwar in Gwalior State, through which flows the Kumārī river. Pāṇini also refers to the compound names Kunti-Surāshtrāh and Chinti-Surāshtrāh indicative of the period when the royal houses of Kunti and Chinti were tied to Surāshtra (VI.2.37).

This phenomenon belongs to Mahābhārata polity when the royal house of Kunti under Dantavakra and of Chinti under Sišupāla suffered a reverse by Kṛishṇa and were tied to the political wheels of Surāshṭra. Chinti seems to be the old name of Chedi.

30. Aśmaka (IV.1.173). Pāṇini also refers to the pair names Avantyaśmakāḥ, showing their geographical proximity (VI.2.12). Aśmaka is named Assaka in Pāli texts with its capital at Paiṭhan (Pratishṭhāna) on the Godāvarī.

Pāṇini refers to Taitila-kadrū (VI.2.42) which is mentioned after Pare-vadavā, 'a mare from across the Indus' and may have denoted a tawny-coloured mare of the Taitila country. Kautilya refers to horses imported from Taitila (Arthasastra, II.30). The Mahābhārata refers to horses of partiridge colour as tittirakalmāsha (Sabhāparva, 28.6; 19) which seems to be an equivalent of Taitila-kadrū. These horses came from the Uttara-Kuru regions (north of Pamīr in Central Asia). The Taitila janapada may therefore be looked for in the neighbourhood of that region. But according to medieval lexicons Taitila was synonymous with Kalinga (Nanartharnava, II.891; Vaijayanti, p. 37, verse 26) which may be identified with Titilgarh, south of Sambalpur in Orissa. In this case Pāṇini's Taitila-kadrū would refer to some tawny-coloured material produced in Kalinga, probably rhinoceros hides, from Taitila,

In the above list the following janapadas mark the extreme points of Pāṇini's geographical horizon, Kamboja in the north, Sauvīra in the west, Aśmaka in the south, Kalinga in the south-west and Sūramasa in the east.

Pănini also refers to boundaries of janapadas as known in the expression janapada-tadavadhi (IV.2.124). This indicates that the janapadas formed the boundaries of other janapadas, without needing any smaller landmark like a village (Kāsikā, tadavadhirapi janapada eva gribyate na grāmaḥ).

The Gana-patha furnishes some additional names of janapadas, viz., Barbara (IV.3.93, on the sea-cost near the mouth of the Indus where the port Barbarika was situated); Kaśmīra (IV.2.133; IV.3.93); Uraśā (IV.3.93, modern Hazara); Darad (IV.3.93, modern Dardistan); Gabdikā (IV.3.93; Patañjali mentions the Gabdikās as living outside Aryāvarta in his time; to be identified with modern Gadderan, the homeland of the Gaddi tribe, beyond Dhaulidhar in the Chamba valley); Patachchara (IV.2.110, probably modern Pataudi), Yakrilloman (IV.2.110 mentioned in the Bhīshmaparya 9.46 and Virātaparva 5.4, and corresponding to the region between Etawah in the north, Jalaun and Orai in the south, and Kalpi in the east); Sarvasena (IV.3.92; also called Sārvaseni, cf. Kāsikā, VI.2.33; VIII.1.5 described as a dry region;). Bhīshmaparva 9.59). Patanjali mentions the names of two other janabadas, viz., Rishika and Jihnu (IV.2.104; II.298, Jihnu, perhaps modern Jhind). The name Rishika occurs in the Mahābhārata as part of Śakadvīpa. Arjuna conquered the Rishikas across the Vakshu (Oxus) 'which flowed through the Śaka country.' The Rishikas were later known as Yuechis whose language was called Ārśī.

Further substantial geographical information is obtainable from the Ashṭādhyāyī in the form of tribal names of people who were living under political constitutions of a varied character. These together with the names of localities as habitation of particular peoples after whom they were named, will be dealt with in a later chapter on political data.

### CH. II, SECTION 5. TOWNS AND VILLAGES

The units of settlement comprised (1) nagara (town) (2) grāma (village) (3) ghosha (abode of herdsmen (VI.2.85) and (4) kheṭa (hamlets, VI.2.126). Pāṇiṇi mentions separately the villages and towns of Eastern India (Prāchām grāma-nagarānām, VII.3.14), but with reference to Vāhīka and Udīchya country he uses the term grāma in a generic sense to include all centres of population (IV.2.117 and IV.2.109). Patañjali in commenting on the distinctions between the terms grāma and pura remarks that these should not be settled by rules of grammar but by local usage (tatrātinirbandho na lābhaḥ, III.321).

The two terms grāma and nagara were used indiscriminately in the Vāhīka country, whereas the distinction between them in eastern India was much more sharp. This may be due to the fact that in the Punjab the villages also had grown in prosperity like the towns, and hence the word grāma there included nagara also in its connotation. The Greek accounts testify to the existence of about five hundred towns, all rich and prosperous, in the Vāhīka country, where naturally the old distinction of grāma and nagara must have lost its sharpness as reflected in the Asbtādbyāyī.

Endings of place-names—Pāṇini uses these various endings to frame rules for explaining the formation of certain words derived from the places concerned, and this is explained by the following examples:—

1. Nagara (IV.2.142), e.g., Mahānagara and Navanagara, as names of towns 'not in the north' (anudīchām, VI.2.89) but in the east. Mahānagara as an eastern town is to be identified with Mahāsthāna, capital of north Bengal or Puṇḍra, and Navanagara with Navadvīpa, capital of west Bengal or Vanga. The latter seems to have sprung up as a 'new town'

when the southern route from Rājagriha to the sea outgrew in importance the route along the north bank of the Gangā, from Mithilā and Anga to Pundra. In between Mahānagara and Navanagara lay Gaudapura (VI.2.100), modern Gauda, an important town on the route from Champā to Mahāsthāna and a trading centre for guda manufactured in the Pundra country.

2. Pura (IV.2.122), which is mentioned by Pāṇini as an ending in the following names of towns, e.g., Arishṭapura (Pāli Ariṭṭhapura, a city in the kingdom of Śivi in Vāhīka), Gauḍapura (VI.2.100, Gauḍa in Maldah in Bengal); Hāstinapura (the well-known epic town in Meerut district), Phalakapura (Phillaur on the Sutlej in Jullundhar district.); Mārdeyapura (VI.2.101), probably Maṇḍāwar in Bijnaur district where the ancient route to Hastinapur crossed the Gāṅgā on its opposite bank.

Patañjali mentions Nândīpura (IV.2.104; II.298) as a Vābīkagrāma.

The Kāśikā adds the following names: Kāntipura (IV. 2.122); Lalāṭapura (probably in the region called Lalāṭāksha, modern Ladakh; Sabhāparva, 47.15), Kārṇipura, Nārmapura, Śivadattapura (VI.2.99) and Śivapura (a northern town, probably in the Śivi country).

- 3. Grāma (IV.2.142). Patañjali mentions a grāma called Ishukāmaśamī, both eastern and western (pūrva, apara (VI.1.85, III.62) to which the Kāśikā adds the name Kṛishnamṛittikā (VII.3.14), both situated in Eastern India (Prāchām).
- 4. Kheṭa (VI.2.126), a small hamlet; Hindi and Gujrati kheṛā.
- Ghosha (VI.2.85), a settlement of cowherds (ābhīrapallī).
- 6-9. Kūla, Sūda, Sthala, Karsha (VI.2.129), endings applied to names of villages according to the Kāšikā (grāmanāmadheyāni) which gives the following examples: Dākshikūla, Māhakikūla; Devasūda, Bhājīsūda; Dākshikarsha. Kalhaṇa

refers to sūda as a place-name ending (Rāj. I.157, 167). Kar-sha of Pāṇini might be the same as karshū (pit or hollow) of older literature (Drāhyāyaṇa Gṛihya, III.2.31; Khādira, III.5.36).

The ending sthala occurs in the name Kapisthala implied in sūtra (VIII.3.91, modern Kaithal in Karnal district). It may be noted that the ending sthala had an alternative form sthalī (IV.1.42). Pāṇini takes it in the sense of a natural (akritrima) dry land. The Kāśikā instances under sthalī Dāṇḍāyanasthalī and Māhakisthalī.

10-11. Tīra and Rūpya (IV.2.106). In another sūtra Pāṇini gives the name Kāstira as that of a nagara (VI.I.155). Patañjali takes it to be a Vāhīka-grāma (IV.2.104, II.293).

The Kāšikā mentions Kākatīra, Palvalatīra, and Vrikarūpya, Šivarūpya, respectively as examples of these endings.

12-15. Kachcha, Agni, Vaktra, Garta (IV.2.126). No examples of these names are found in the sūtras and in Patañjali, but there was the well-known seaport called Bhrigukachchha (Bharukachchha, Jāt. No. 463) called Broach. The Kāśikā instances under kachchha Dāru-kachchha and Pippalī-kachchha (Rajpipla near the mouth of the Narbada); under agni Kāṇḍāgni and Vibhujāgni (modern Bhuj); under vaktra Indravaktra and Sindhuvaktra; under garta Bahugarta and Chakragarta.

Here we have four pairs of eight geographical names, preserved as grammatical examples from antiquity. A careful glance at the map of western India affords clue to their identification. Standing at the head of the Gulf of Cambay, we have to our left Pippalī-kachchha, the sea-coast of Pippalī, comprising the delta areas of Sābarmatī, Mahī, Narmadā and Tāptī rivers, of which the old name is still preserved in Pīplā or Rāj-Pīplā. To our right is the sea-coast of Kathiawar, literally equivalent of Dāru-kachchha (Dāru=Kāshṭa).

Agni refers to a burning sandy tract, equivalent to Skt. Irina or Rann. Vibhujāgni refers to the great Rann of Cutch-

Bhuj in the north-west, and Kāṇḍāgni to the Little Rann of Cutch towards the north-east, traces of its name being preserved in the sea-port of Kāṇḍalā.

Of the pair of names ending in vaktra, Sindhu-vaktra clearly refers to the Indus Delta in lower Sindh depending for its irrigation on that river, and therefore a nadīmātrika region. Opposed to it were the deva-mātrika tracts of Baluchistan where the parched soil depends for irrigation on whatever it gets as scanty rainfall. The country was therefore called Indra-vaktra as opposed to Sindhu-vaktra. The Mahābhārata mentions the exact nature and location of these two regions (Sabhāparva, 51.11-12), the agricultural produce in one being called Indrakrishta and in the other nadimukha (Indrakrishtair-vartayanti dhanyair-ye cha nadimukhaih). The former lay across the river Indus (Pāre-Sindhu, Sabha, 51.11); and comprised the peoples of Kej-Makran named Kitavāh (=Kej), Pāradāh (=Hingulaj) and Vairāmāh (=Rambakia of Alexander's historians; Sabhāparva, 51.12).

The last pair of names refers to Bahugarta and Chakragarta. Bahugarta refers most likely to the valley of the Sābarmatī, Skt. Śvabhramatī, literally the river of holes or pits (śvabhra—hole, pit). Chakragarta refers to the region of Chakra-tīrtha on the Gomatī near Dvārkā in Prabhāsa-kshetra. The two indicated the peculiarity of the natural terrain formed by undulating loessic dunes.

Pāṇini refers to garta-ending names again in sūtra IV.2. 137 and separately mentions Trigarta. Patañjali names Śvāvidgarta as a Vāhīka-grāma (IV.2.137), to which the Kāśikā adds Śrigālagarta, Vrikagarta, both Vāhīka-grāmas.

16. Palada (IV.2.142) found in such names as Dākshipalada. This word in the Atharvaveda (IX.3.17) denotes straw and may have denoted a place in the vicinity of which stumps of various weeds and grasses were found.

17. Arma (VI. 2. 90). Pāņini mentions Bhūtārma,

Adhikārma, Sanjīvārma, Madrārma, Aśmārma and Kajjalārma (VI.2.91), to which the Kāśikā adds Dattārma, Guptārma, Kukkuṭārma, Vāyasārma, Bṛihadarma, Kapinjalārma, Mahārma and Navārma. The Tāṇḍya Brāhmaṇa mentions a lake (brada) called Sthūlārma north of the Sarasvatī, where on its pasture-lands 100 cattle had grazed and increased to 1,000 (XXV.10.8). The word arma in the Baudh. Śrauta Sūtra (ix.l; ix.3) is explained by the commentator as a village in ruins (vinashṭagrāma) and deserted (śūnya).

18. Vaha (IV.2.122). Pāṇini mentions Pīluvaha in sūtra VI.3.121, on which the Kāšikā adds Rishīvaha, Kapīvaha, Munīvaha, Piṇḍavaha, Dāruvaha and Phalgunīvaha (probably modern Phagwara, IV.2.122). Patañjali names Kaukkuḍīvaha as a Vāhīka-grāma.

19. Hrada (IV.2.142). The Kāšikā repeats the stockexamples Dākshi-hrada and Māhaki-hrada. The Mahābhārta knows Rāma-hrada in Kurukshetra (Āraṇyakaparva, 81.22).

20. Prastha (IV.2.122; IV.2.110). Pāṇini mentions Karkīprastha and Mālāprastha in sūtras VI.2.87-88, and in the Gaṇa-pāṭha adds: Maghī-, Makarī-, Karkandhū-, Śamī-, Karīra-, Kaṭuka-, Kavala-, Badarī, (VI.2.87), Śālā-, Śoṇā- (Sonepat), Drākhsā-, Kshaumā-, Kāñchī-, Eka- and Kāma-. To these the Kāśikā adds: Indraprastha (well-known epic town), Kuṇḍa-, Hrada-, Suvarṇa-, Dākshi-and Māhaki, the latter two being stock-examples.

In Pāli the term prastha is thus explained by Buddha-ghosha: 'It denotes a place outside the grāma, a wasteland not used by men either for ploughing or sowing (Dhammapada-Atthakathā, 1.210; Dīgh. 1.71). It may be noted that the places ending with prastha (Hindi, pat) are confined mostly to the Kuru country, such as Panipat, Sonepat, Baghpat, Tilpat, etc., and to the region of the Himalayas watered by the Ganges.

21. Kanthā (IV.2.142). Pāṇini gives the interesting information that this ending was in use in Uśīnara (II.4.20)

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and Varnu (Bannu) (IV.2.103). He names the following places:—

Chihanakantha, Madarakantha, Vaitulakantha, Patatkakantha, Vaidālikarnakantha, Kukkutakantha, Chitkanakantha, the first one in sūtra VI.2.125 and the rest in gana. The ending and the place-names seem to show that Panini was drawing upon the linguistic material of the frontier country and its non-Arvan dialects. Kanthā was a Śaka word for a town as in the expression kadhavara=kanthavara occuring in a Kharoshthī inscription: "Here belongs Sogdian expression kanda- "city", and Śaka kantha "city", earlier attested in Markantha" (Lüders, JRAS., 1934, p. 516; also Sten Konow, Corpus of Kharoshthi Inscriptions, p. 43; Saka Studies, pp.42, 149, kantha "town" in feminine gender). H. W. Bailey also points out that the Persion word kand, Khotanese kantha, Sogdian Buddhist Sanskrit kndb, Pashto kandai, Asica (the dialect of the Rishikas or Yue-chis) kandā, are all akin to Sanskrit kantha (H. W. Bailey, Asica, Transactions of the Philological Society, 1945, pp. 22-23).

It may be noted that in the time of Pāṇini and as stated by Darius I, in his inscriptions, the Śakas were living beyond the Oxus (Śaka tyiy paradraya 'the Śakas to the east of the Caspian Sea, Naksh-i-Rustam Ins.). That region naturally still abounds in kanthā-ending place-names, as Samar-kand, Kho-qand, Chim-kand, Tash-kent, Panj-kand, Yar-kand, all indicating Śaka influence.

The Mahābhārata speaks of the Śakas as living in this region, named by it as Śākadvīpa, and particularly mentions its places like Chakshu (=Oxus), Kumud (=Komedai of Herodotus, a mountain in the Śaka country), Himavat (=Hemodan mountain), Sītā (=Yarkand river), Kaumāra (=Komarai of Herodotus), Mašaka (=Massagetai of Strabo), Ŗishika (=Asioi), Tushāra (=Tokarai).

Pāṇini also must have known the Śakas, not in Seistan but in their original home in Central Asia. How a string of kanthā-ending place-names was found in the Uśīnara country in the heart of the Panjab, is an unexplained problem. It points to an event associated with Śaka history even before Pāṇini, possibly an intrusion which left its relics in place-names long before the Śaka contact with India in the second century B.C. Kātyāyana mentions Śakandhu, Karkandhu, two kinds of wells of the Śakas and the Karkas (Karkians), which may be identified as the stepped well (vāpī) and the Persian wheel (arghatta) well respectively.

Lastly we owe to the Kāśikā the following names ending in kanthā; Sauśamikantha, Āhvarakantha, both in the Uśīnara country in Vāhīka (II.4.20).

TOWNS—Pāṇini's geography mentions towns which may be grouped under two divisions, called *Udīchyagrāma* (IV.2.109) and *Prāchyagrāma* (VII.3.14). Among the *Udīchya* towns some lay in the *Vāhīka* country (*Vāhīka-grāmas*, IV.2.117), and some in its southerly part known as Ušīnara (IV.2.118), while others were located outside Vāhīka towards the west (the present North-West Frontier Province).

The sūtras mention the following towns which naturally figure in them as being the most important in those days:

- 1. Kāpišī (IV.2.99). It was a town known for its wine Kāpišāyana as already stated. According to Pliny Kāpišī was destroyed by the Achaemenian emperor Cyrus (Kurush) in the sixth century B.C. It is identified with modern Begram, about 50 miles north of Kābul on the ground of a Kharoshṭhī inscription found there naming the city (Sten Konow, Ep. Ind., Vol. XXII (1933), p. 11).
- Sauvāstava (IV.2.77) capital in the valley of the Suvāstu or Swat.
- 3. Varaṇā (IV.2.82). It may be identified with the place called Aornos by the Greeks as a fort in the country of the Assakenoi (Āśvakāyanas). It may correspond to modern Ūṇa, pronounced Ūṇra in Pashtu, situated a few miles west of the Indus, as pointed out by Sir Aurel Stein who gave its conjec-

tural restoration as Avarņa. It really corresponds to Varaņā mentioned by Pāṇini (Arch. Survey Memoir., No. 42, pp. 89-90).

- 4. Vārṇava (IV.2.77; IV.2.103). It was so called from its situation in the Varnu or Bannu valley.
- 5. Salātura (IV.3.94), modern Lahur situated at a distance of four miles from Ohind on the right bank of the Indus, in the northern angle of the junction of the Kabul river, identified as the birthplace of Pāṇini.
  - 6. Tūdī (IV.3.94), not identified.
- 7. Varmatī (IV.3.94), Bimran (Masson, Ariana Antiqua, p. 69), or possibly Bamian.
- 8. Kūchavāra (IV.3.94); it was Kūchā, the old name of Turkestan appearing in a Sanskrit manuscript and inscriptions from that region (Lüders, Zur Geschichte und Gographie Ostturkestans, p. 246). Varāhamihira mentions the Kūchikas amongst the people of the north.
- 9. Takshaśilā (IV.3.93); Pāṇini applies the term Tākshaśila to those whose ancestors (abhijana) lived at Takshaśilā. Takshaśilā existed in all its glory at the time of Alexander's invasion and is described by the Greek writers as "a great and flourishing city, the greatest, indeed, of all the cities which lay between the Indus and the Hydaspes" (Alexander's Invasion, p. 92).
- 10. Śārkara (IV.2.83), modern Sukkur in Sind on the Indus opposite Rori. The Mārkandeya Purāņa knows of a western people called Śarkarāḥ (Pargiter, Mārk. P., p. 373).
- 11. Sānkala (IV.2.75) probably the same as the town Sangala, the capital of the republican peoples called Kathoi (Kathas) by the Greeks, which was strongly fortified; modern Sāngalāwālā Tībā in Jhang district (Alexander's Invasion, p. 115).
- Kāslīra (VI.1.155), mentioned as a Vāhīka city by Patañjali.
  - 13. Ajastunda (VI.1.155), not identified.

- 14. Chihanakantham (VI.2.125), a town in the Uśinara country where the word kanthā was a popular ending.
- 15. Arishtapura (VI.2.100), same as Aritthapura, a city of Sivi kingdom referred to in Buddhist literature.
- 16. Gaudapura (VI.2.100), Gauda, the well-known town in Maldah district in Bengal.
- 17. Kapisthala (VIII.3.91), modern Kaithal in Karnal district.
  - 18. Katri (IV.2.95).
- Hāstinapura (VI.2.101), same as Hastinapur on the Gangā in Meerut district.
- 20. Phalakapura (VI.2.101), probably Phillaur in Jullundhur district.
- Mārdeyapura, (VI.2.101), probably Maņdāwar in Bijnaur district.
  - 22. Paladī (IV.2.110).
  - 23. Roni (IV.2.78), probably Rodi in Hissar district.
- 24. Sānkāśya (IV.2.80), modern Sankissā, situated on the north bank of the river Ikshumatī in Farrukhabad district. The Sānkāśyādi group also includes Kāmpilya, modern Kampil in Kaimganj Tehsil of Farrukhabad.
- 25. Āsandīvat (VIII.2.12; IV.2.86), name of the royal city of Janamejaya Pārīkshita, in which the horse for his famous sacrifice was bound (Vedic Index, I. 72); the Kāśikā equates it with Ahisthala.
- 26. Śikhāvala (IV.2.89), name of a nagara according to the Kāśikā; probably Sihawal on the left bank of the Son in Rewa State. Pāṇini again refers to Śikhāvala as a proper name (Danta-Śikhāt samijāāyām (V.2.113).
- 27. Mahānagara and Navanagara (VI.2.89), names of two eastern towns; the former may be identified with Mahāsthāna and the latter with Navadvīpa, both ancient towns in Pundra and Vanga, i.e. North and West Bengal.

TOWNS IN THE GANAS-The ganas mention the names of

about 500 towns. Of these the more famous are noticed here, while a full list is given in an Appendix:

- 1. Saunetra, modern Sunet in Ludhiana district, three miles south-west of Ludhiana town, with a large mound and other ruins indicative of an old city; here were found Yaudheya, Agreya and other coins of the pre-Christian period (Cunningham, ASR., Vol. XIV., p. 65; Pāṇini Sankalādi-gaṇa).
- Śairīshaka (IV.2.80); same as Sirsā, headquarters of a subdivision of the same name in Hissar district, and situated on the north side of a dry bed of the Ghaggar, having considerable ancient ruins.
- 3. Taushāyaṇa (Pakshādi-gaṇa, IV.2.80); modern Ṭohānā, a place of historical and archaeological interest in the Fathabad Tehsil of Hissar district.
  - 4. Śrāvastī (IV.2.97).
  - 5. Vārāņasī (IV.2.97).
  - 6. Kausāmbī (IV.2.97).
- 7. Pāvā (IV.2.97), probably Pāwā of the Pāli texts, capital of the Malla country.
- 8. Saubhūta (IV.2.75), usually identified with the kingdom of the Sophytes mentioned by the Greek writers (M'Crindle, Alexander, p. 280). The place is especially noted by the Greeks for a ferocious breed of dogs whose fame spread to Greece even before Alexander's time (ibid., p. 364). The Rāmāyaṇa also refers to similar dogs bred in the Kekaya country of the Salt Range. It describes them as bred in the royal kennels (antaḥpuréti-samvṛīddhān), strong like tigers vyāghra-vīrya-balopamān), big in size (mahā-kāyān) and with big teeth (mahādamshṭrān, Rāmāyaṇa, II. 70.20). It was probably this breed of dogs that was referred to by Pāṇini as kauleyaka (IV.2.96). Saubhūta was thus a part of Kekaya in the Salt Range.

The Kāśikā gives the following examples of towns with the ending nagara: Nāndīnacaga, Kāntinagara in the north (udīchām); Suhmanagara and Pundranagara (the capitals of Suhma and Puṇḍra provinces in eastern India, VI.2.89); Pāṭaliputra and Ekachakrā (VII.3.14; IV.2.123 in the east); Madranagara (in the north, VII.3.24); and Dākshingara (in the country of Pāṇini's kinsmen, a citizen of which was called Dākshinagarīya, IV.2.142); Māhakinagarā (IV.2.142).

With reference to Pāṭaliputra it is interesting to note that it was a vast metropolis with two divisions which the Kāŝikā records as Pūrva-Pāṭaliputra (eastern, on the Ganges) and Apara-Pāṭaliputra (western, on the Son, VII.3.14). A citizen of Pāṭaliputra was called Pāṭaliputraka (Ropadhetoh Prāchām, IV.2.123).

That ancient India possessed a large number of flourishing centres of population in the form of cities or towns is also attested to by Greek writers. According to them the Panjab was full of towns, centres of industry and economic prosperity. Many of these figured as forts or centres of defence such as the famous town of Massage (Maśakāvatī) or Aornos (Varaņā) in the country of the Aśvakas. The free clan called the Glaukanikoi (identical with the Glauchukāyanakas of the Kāšikā on Pāṇini IV.3.99) whose country lay in the fertile and populous regions lying in the south of Kāśmīr (the Bhimber and Rajauri districts) between the upper courses of the Jhelum and the Chenab and the Ravi, had as many as thirty-seven cities, the smallest of which contained not fewer than 5,000 inhabitants, while many contained upwards of 10,000. There were also a great many villages which were not less populous than the towns (M'Crindle, Alexander, p. 112). Strabo affirms that in the territories of the nine nations situated between the Jhelum and the Beas, such as the Malloi, Oxydrakai and others, there were as many as 500 cities (Ibid, p. 112). Megasthenes makes the following general statement on the cities of Mauryan India: "Of their cities it is said that the number is so great that it cannot be stated with precision" (M'Crindle's Megasthenes and Arrian, p. 209).

The above accounts of Greek historians do not seem to suffer from exaggeration, as only in the lists attached to the two sūtras IV.2.75 and IV.2.80 we have about 500 names, and these may be further augmented if we add the testimony of the other ganas, as those headed by Suvastu (IV.2.77), Varana (IV.2.82), Madhu (IV.2.86), Utkara (IV.2.90), Nada (IV.2.91), Kattri (IV.2.95), Nadī (IV.2.97), Kāśi (IV.2.116), Dhūma (IV.2.127), Karkī (VI.2.87), Chihana (VI.2.125), etc. This gives us a substantial list of about 750 town names, a case of curious coincidence with Greek evidence. Probably both Pāṇini and the Greek geographers depended on a common source or tradition. The grammatical literature is now a valuable source of information regarding the old and forgotten cities of India. This literature like Yuan Chwang's Travels has preserved landmarks in the light of which arahaeological old sites may be verified. It may be further noted that certain names of tribes and gotras as recorded in the ganas (cf. Aśvādi, IV.1.110) point to places with which they were connected.

#### CHAPTER III

#### SOCIAL LIFE

### SECTION 1. CASTE

The Ashṭādhyāyī is full of interesting details regarding the social life, manners and customs of its times. Pāṇini, as we have seen, was acquainted with a large part of India including Gandhāra, Vāhīka, Sindhu, Sauvīra, and the Prāchya country or eastern India. His master-mind did not fail to observe minutely the characteristics of social and economic life in these different regions.

Society in his time was based on Varnāśramadharma, i.e. on Castes and Aśramas or stages into which life was divided.

Pănini twice uses the Vedic term Varna for caste (Dharma-sîla-varnāchcha, V.2.132; VI.3. 84) which is more often referred to by the specific term Jāti adopted in later legal texts (II.1.63; VI.3.41).

The term Jāti seems to have a more comprehensive sense so as to include both gotra and charana indicative of natural and cultural lineage as implied in sūtra II.1.63 (Katara-katamau jāti-paripraśne). Patañjali explains jāti in this extended sense (gotram cha charanaih saha, TV.1.63), citing as its examples the Katha and Kalāpa charanas (cf. also sūtra V.3.93). Evidently the gotras and charanas were fast developing their separate entity as jātis.

BRĀHMAŅA. The Brāhmaņas formed the highest caste. There were four principal castes which Kātyāyana mentions as Chāturvarnya (V.1.124). These were to be mentioned in their order of status, as pointed out definitely by Kātyāyana in a vārttika on Pāṇini II.2.34 (varṇānām ānupūrvyeṇa pūrvanipātaḥ), as Brāhmaṇa-Kshattriya-Viţ-Śūdrāḥ (Bhāshya, I. 436). Thus the Brāhmaṇa was the highest caste.

Pāṇini uses the Vedic term Brahman (V.1.7) and also Brāhmaṇa for the caste (Brāhmo' jātau, VI.4.171). He seems to find a distinction between them taking the former in a cultural reference as shown in the derivative brahmaṇya (Brahmaṇe bitain) to indicate what appertains to the spiritual welfare of a Brāhmaṇa (Brāhmaṇebhyo bitain, Bhāshya, V.1.7; II.339), and reserving the term Brāhmaṇa for the caste based on birth (son of a Brahman). This point is also explained by Patañjali stating that 'although the two terms Brahman and Brāhmaṇa are synonymous (samān-ārthau etau . . . Brahman-šabdo Brāhmaṇa are synonymous (samān-ārthau etau . . . Brahman-šabdo Brāhmaṇa to have the form brahmaṇya.

Păṇini in a sūtra V.1.124 refers to the bhāva (nature) and karma (conduct) which should characterise a Brāhmaṇa (Guṇavachana-Brāhmaṇādibhyah karmaṇi cha). These are indicated in the derivative expression Brāhmaṇya. Kātyāyana applies this rule to the four castes collectively to indicate the norm and the duties for which the system stands.

Provincial Distinctions amongst Brāhmaņas (JĀNA-PADĀKHYĀ). Pāṇini knows of the practice of the Brāhmaṇas being named after the localities (janapada) to which they belonged by birth (V.4.104, Brahmaṇo jānapadākhyāyām), of which the Kāšikā cites the following examples: Avanti-Brahmaḥ and Surāshṭra-Brahmaḥ, i.e. a Brāhmaṇa of Avanti janapada, (modern Malwa), and a Brāhmaṇa of Surāshṭra or Kathiawar. Such names are the precursors of the later terms like Kānyakubja, Sārasvata, Mahārāshṭra and Gurjara Brāhmaṇas.

A degraded Brāhmaņa was called ku-Brahmaḥ (V.4.105), while a Brāhmaņa pre-eminent in his duties (dharma) mahā-Brahmaḥ (V.4.105). The Pāli texts take Mahā-Brahmā to mean a super-Brāhmaṇa, one with realised soul. The Mahānārada-kassapa Jātaka speaks of Bodhisattva Nārada as being the Mahā-Brahmā (Great Brahmā) at a particular epoch (Jāt. VI.242). The Mātanga Jātaka explicitly refers to the

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superior position of a Mahā-Brahmā (Jāt. IV.377; cf. also Jāt. No. 254).

KSHATRIYA. Pāṇini mentions the Kshatriya caste in connection with gotras, janapadas and sangbas. For example the Kuru gotra occurred both amongst Brāhmanas (IV.1.151) and Kshatriyas (IV.1.172). If the father was a Brāhmaṇa, he and his young (yuvan) son were both called Kauravya, but if a Kshatriya they would be Kauravya and Kauravyayani (II.4. 58, Kāśikā). Andhaka and Vrishni were Kshatriya gotras. As to Kshatriyas associated with the janapadas, they as original founders gave their name to the region where they settled down (Janapada-śabdāt kshatriyād añ, IV.1.168), the ruling families being designated as janapadins (IV.3.100); e.g. Pañchāla country named after the Panchala Kshatriyas; similarly Dardistan from Darads, Johiyāwār (Bahawalpur) from Yaudheyas, Mālva (in Ferozpur-Ludhiana) from ancient Mālavas (now called Malavais). Pāṇini specially mentions the Vāhika sangbas (V.3.114), some dominated by Brahmanas as ruling caste (Gopālavas), others by Rājanyas, and called Rājanyaka (IV.2.53), most likely referring to the Ranas of the Hill-States. The majority were Kshatriya sangbas, as Kshudrakas, Malavas (V.3.114, Kāšikā), Vrikas (V.3.115), Yaudheyas (V.3.117). Distinguished Kshatriya heroes had become objects of religious bhakti (IV.3.99) before Panini's time, referring to the emergence of a popular cult of hero-worship.

RĀJANYA—In the Samhitās Rājanya is a synonymous term with Kshatriya. Pāṇini has retained the old sense of the word in sūtra IV.2.39, whereas he has used it in a new constitutional significance in sūtra VI. 2. 34 (Rājanya-bahuvachana-dvandve Andhaka-Vṛishṇishu), where the Kāśikā defines rājanya as a member of such families in a Kshatriya tribe as were consecrated to rulership (abhishikta-vainsya kshatriya). VAIŚYA. The Vaiśyas were given the title arya to indicate their social status (Aryaḥ svāmi-vaiśyayoḥ, III.1.103).

ŚŪDRA-Pānini refers to some Śūdras living within the pale of

the Aryan society (aniravasita, II.4.10), implying that there were other Śūdras, probably aboriginal peoples, who were yet to be assimilated in the Aryan society.

Patañjali makes clear the social status of the Sudras in his time. Firstly, there were Śūdras who were not excluded from Āryāvarta but were living within its social system. Secondly, there was another class of Śūdras who were living outside Āryāvarta and its society. He cites as examples (1) Kishkindha-Gabdikam (2) Śaka-Yavanam and (3) Saurya-Krauncham. Of these Kishkindha may be identified with Pali Khukhundo in Gorakhpore, Gabdikā with the Gaddis of Chamba, who were deemed as living outside the limits of Aryavarta, Saurya with Soreyya or Soron in Etah district and Krauñcha with the later Krauñcha-dvāra somewhere in Garhwal. The Śakas and the Yavanas who are termed Śūdras were not yet parts of the Aryan society and were outside Aryavarta in Patanjali's time. The Aryan society was at pains to repel the invasion of the Yavanas (Greeks under the leadership of Demetrius and Menander) and this hostility must have emphasized the cleavage between them. The Śakas geographically were still living outside the borders of India in the second century B.C. But in the first century B.C. we find Saka settlements springing up at Takshasilā, Mathurā and Ujjayinī.

Thirdly, there were Śūdras who had separate settlements of their own within the Aryan colonies (ārya-nivāsa), such as a grāma (village), a ghosha (cattle ranch), a nagara (town) or a samvāha (caravan camp). Examples of such Śūdras are Mṛitapas (undertakers), Chāṇdālas, who were of the lowest grades. Fourthly, there was another class of Śūdras who were entrusted with some of the work connected with yajñas or sacrifices as carpenters (takshā), metal-workers (ayaskāra), washermen (rajaka) and weavers (tantuvāya). There were also Śūdra untouchables who had to take their food in their own utensils and not in those of the household, while there were others who were not subject to this restriction as

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being more closely associated with the household (yair-bhukte pātram samskāreņa śudbyati, II.4.10; I.475).

ĀRYA AND DĀSA. Pāṇini applies the epithet Ārya to a Brāhmaṇa to denote the king's chief counsellor (Ārya-Brāhmaṇa) and to Kumāra to denote the Crown-Prince (Ārya-Kumāra, VI.2.58).

The use of the term Ārya in the expression Ārya-krita in sūtra, IV.1.30, (feminine Āryakritī, terms which were also Vedic words) had a specific meaning in current speech (samijna). The meaning of these terms is best explained by Kautilya (Dāsakalpa chapter). Kautilya takes Ārya to mean a free man as opposed to Dāsa who had lost his freedom, e.g. "The offspring of a man who has sold himself off as a slave shall be an Arya; on paying the value (for which one is enslaved) a slave shall regain his Aryahood' (Āryatava, Āryabhāva, Artha. Text, III.13). The regulations contained in that chapter aim at humanising the institution of dasya and restoring to the dasas the privileges of an Arya or 'free citizen.' The linguistic form Aryakrita (i.e. Arya with the root kri) is also implied in Kautilya's expression, Dasamanurupena nishkrayen-Āryamakurvato dvādaša pano dandah, i.e., '12 panas is the fine for not making a slave a freeman (Arya) even after receiving the proper ransom.' The feminine form Aryakriti would denote the woman similarly made free, or her daughter who had obtained the status of an 'adasa' or 'Arya' either through payment of ransom or birth. (Cf. Artha. Text, III.13, Mātā bhrātā bhaginī chāsyā adāsāh syuh). Pāṇini uses dāsī-bhāra in sūtra VI.2.42, as a word with specific meaning (samjāā). The Kāśikā explains it as dāsyā bhārah, i.e. the burden of a dāsī to be borne (by her master). Kautilya states, 'If a pregnant female slave is sold or pledged without any provision for her confinement, her master is punishable.' (Artha. Trans. p. 207). This probably explains the nature of the burden implied in the term dasibhāra of Pānini,

MIXED CASTES—Pāṇini uses the terms anuloma and pratiloma (V.4.75) which are well-known in later Smṛiti texts. The Ashṭādhyāyī mentions the names Ambashṭha and Āmbashṭha (VIII.3.97). These were a republican people in the Panjab. They are taken to be a mixed caste in the Smṛitis, as the offspring of a Brāhmaṇa husband and a Vaiśya wife. Pāṇini also knows of a class of people called udakahāra (or udahāra, VI.3.60), 'drawer of water,' who may be taken as a caste (Hindi kahāra). It may be noted that Kātyāyana knows of a special caste (jāti) called mahāśūdra, with its female mahāśūdrī. The Kāśikā explains the term to mean the Abhīras regarded as higher Śūdras.

# CH. III, SECTION 2. AŚRAMAS

Pāṇini knows of (1) Brahmachārin (V.2.134), (2) Grihapati (IV.4.90), (3) Parivrājaka (VI.1.154), and (4) Bhikshu (III.2.168). The system of four āśramas is called by Kātyāyana chāturāśramya (V.1.124).

BRAHMACHĀRIN—Brahmacharya denoted the condition or life of a Brahmacharin or religious student. The institution of Brahmacharya was known to Pāṇini in its full development. He refers to educational institutions known as the Charaṇa or Vedic schools devoted to the study of some major recension (āmnāya) of the Vedas together with its accessory and subordinate literature (IV.3.126). The Brahmachārins congregated for study at a Charaṇa which was run under the direction of one great teacher or Vedic exponent. From the manner of Pāṇini's reference to this organisation it appears that the Brahmachārins looked upon their Charaṇa as their alma mater, and were attached to it by permanent bonds of common fellowship with other members of the same school, all distinguished as sabrahmachārins (Charaṇe Brahmachāriṇi, VI. 3.86).

The growing distinction of the religious student is indicated by the emergence of a new word Varņī, unknown in the Samhitā and Brāhmaņa literature. Pāṇini explains it as a synonym for Brahmachārin (Varṇād Brahmachāriṇi, V.2.134). According to the Kāśikā the students of only the three upper classes (traivarṇika) were called Varṇī.

The preceptor or Āchārya initiated the young student. Every pupil became attached to his preceptor by a formal ceremony which Pāṇini calls upanayana and āchārya-karaṇa (I.3.36). The Kāšikā explains it as follows:

'Achāryakaraņa is a ceremony (kriyā) by which the

teacher brings the pupil (māṇavaka) into close relationship with him (ātmasamī pain prāpayati). By means of this ceremony the upanetā (performer of the upanayana ceremony) formally becomes the āchārya.'

Pāṇini uses the two terms māṇava and antevāsin for the pupils (VI.2.69). The former were also called daṇḍa-māṇavas (IV.3.130), probably from the staff they bore. The māṇava seems to have been a novice, as seen from the term bāla applied to him in the Mātanga Jātaka, which also calls him daṇḍa-māṇava (IV.379, 387).

Pāṇini mentions a daṇḍa made of palāśa wood (Butea frondosa) as āsbāḍba (V.1.110).

PERIOD—There is a general rule by which the student was to be named after the special circumstances of study (Tadasya Brahmacharyam, V.1.94). The maximum period of studentship is stated by Kātyāyana to be 48 years, the student concerned being called ashtā-chatvāriniśaka (also ashtā-chatvāriniśi). The same vārttika refers to gaudānika whose period of study ended by the performance of the godāna or hair-cutting ceremony (cf. Manu, II.65).

Besides the studentship proper for fixed periods, there were occasional studentships for shorter terms, e.g., students for half a month (ardhamāsika), a month (māsika), or a year (sāmvatsarīka), as instanced by the Kāŝikā.

Kātyāyana also introduces a new feature, viz. naming occasional students after their subjects, or vows (special disciplines adopted by them), e.g. Māhānāmnika, one studying the Mahānāmni hymn (a kind of Sāman, cf. Gobhila Grihyasūtra, quoting Rauruki Brāhmaṇa); Ādityavratika, a student who had consecrated himself to the vow of mastering the Āditya Sāma (cf. Jaīminīya Upanishad Brāhmaṇa), Avāntara-dīkshī (one who enters upon the vow of studentship for an intermediate period), and Tilavratī (probably the vow of studentship to last through life, such as that of the naishṭhika Brahmachārī).

The occasional studentships for shorter terms or study of special texts or observance of particular vows points to a new feature in the educational system. These gave to seekers after truth and advanced knowledge, opportunities for specialisation to realise their desires towards self-fulfilment both through the study of texts and prescribed practices. This practice of occasional studentship is also known to the *Upanishads*.

SNATAKA-The student who completes his study is called snātaka. The Ganasūtra holds it as completion of Vedic study (Veda-samāpti, V.4.29). The more proficient snātaka was singled out as nishnāta (with his study fully completed). This term for proficiency was later on applied to proficiency in any study or craft, e.g. nishnātah katakarane, skilled (kuśala) in the art of mat-making (VIII.3.89). The epithet sragvi (V.2.121, wearer of garland) appears also to have been applied to a snātaka. The srak was a sign of graduation and the Gribya Sūtras differentiate it from the ordinary garland for decoration called mālā (V. M. Apte, Social and Religious Life in the Gribya Sūtras, p. 107). Manu also applies the term sragvi to a snataka (Manu Smriti, III.3). A student who ends his studentship and enters upon the householder's life is condemned by Pānini as khatvārūdha ('taking to the luxury of sleeping on a cot,' not permitted to a Brahmachāri, II.1.26). HOUSE-HOLDER--Gribabati is the regular name, from the Rigueda onwards, for the householder as master of the house. Pānini refers to him in connection with the Fire kindled at the time of marriage with whose worship commenced his life as a householder (Gribapatinā samyukte nyah, IV.4.90). The Kāšika treats Gārhpatya as the technical term for the Household Fire.

His wife was technically called *Patnī* derived from the term *Pati* to whom she was wedded at the sacrifice (*Patyur-no yajāasañyoge*, IV.1.33). The two together tended through life the sacred Family Fire, (*Gārhapatya Agni*) essential for the performance of domestic ceremonies. As

stated by Manu (III.67) the married couple installed and tended the vaivāhika agni for the gribya rites. They were also called āvasathika from their dwelling in an āvasatha (IV.4. 74), from which their Fire was named Āvasathya.

Happy family life is envisaged in such terms as suprajas (V.4.122), bahupraja (V.4.123), putrapautrīņa, 'having healthy sons, a big family, and enjoying generations of sons and grandsons' (putrapautram anubhavati, V.2.10).

The head of the family was called Vanisya (IV.1.163) or Vriddha (I.2.65), i.e. Patriarch, and its other members Yuvan (Juniors). Pāṇini teaches different suffixes to distinguish the head of the family from its junior members. This distinction between the patriarch and his descendants was expressed by appropriate suffixes, e.g. Gārgya as patriarch, and his juniors as Gārgyāyaṇa. The family or the household was the centre of social life supporting its different factors. These distinctive titles were of real practical value; e.g. a Gārgya as patriarch represented his family in the social assemblies, whereas the junior members called Gārgyāyaṇa would be given the nomenclature Gārgya only when they were admitted to the headship of the family in the absence of Gārgya the elder.

The duties of the householder were to entertain the guests (atithi), to make suitable gifts on occasions (vyaya I.3.36; upayoga, I.3.32), to perform the family sacrifices (yajñas) and offer due worship to the ancestors (śrāddha, IV.3.12).

The economic pursuits of a householder are also indicated. He might be a priest (ritvik), merchant (vāṇija, VI.2.13), an agriculturist (krishīvala, V.2.112), craftsman (śilpī), a labourer earning wages (bhritaka karmakara, III.2.22), and the like. Rich householders are referred to as possessing hoarded wealth, amounting to 100 (naiskha-śalika) and 1000 niskhas (naishka-sahasrika, V.2.119).

## CH. III, SECTION 3. MARRIAGE

The householder's life began with marriage. Its ceremony was performed round the Fire as witness. Pāṇini refers to marriage by the word npayamana (I.2.16), which he explains as sva-karaṇa, i.e. 'the bridegroom making the bride his own' (I.3.56). The marriage ceremony was solemnised by pāṇi-grahaṇa, 'the holding by the bridegroom of the bride's hand.' Pāṇini uses two other terms for it, haste-kṛitya and pāṇau-kṛitya. This holding of the hand was a symbol of sva-karaṇa, i.e. formal transfer of the father's dominion over the girl to the husband. We may cite Manu's comment that this ceremony was observed for marriage within the same caste (III.43).

This formality was considered so important in marriage that Kātyāyana calls the legally wedded wife as pāṇi-gṛihītī (vār. on IV.1.52; Bhāshya II.221), whereas the girl married without proper ritual was marked out by the different term pāṇi-gṛihītā (yasyā hi yathākathamchit pāṇir-gṛihyate, II.221). SOCIAL EFFECT OF MARRIAGE—The legal effect of marriage is an important proposition in Hindu law. The term sva-karaṇa of Pāṇini is explained by Patañjali as 'making one's own what was not so previously' (asvam yadā svam karoti, Bhāshya, I.3.56; I.284). According to Manu marriage meant the gift (pradāna) of a girl by her parents by which they transferred their dominion over her to the bridegroom (pradānam svāmya-kāraṇam, V.152).

According to Pāṇini, the bride whom the husband marries should be a kumārī, which is explained by Patañjali as apūrva pati, i.e. one who is not previously married (Kaumārāpūrvavachane, IV.2.13). The virgin after marriage was honoured by the title kaumārī bhāryā, and her husband kaumāra-pati. It

is the same as the epithet ananyapūrvikā applied by Yājñavalkya (I.52). The husband and his wife after marriage had to perform jointly the sacrificial rites, from which the wife derived the title of honour as patnī (patyur-no yajña-sañiyoge, IV.1.33). It was denied to a woman not properly married. The social status of the husband devolved on his wife, as implied in Pāṇini's sūtra (Pumyogād ākhyāyām, IV.1.48), i.e. a designation derived from her husband; e.g. mahāmātrī (ministrix), wife of a mahāmātra, a high government official, and gaṇakī, wife of a gaṇaka (accountant). Pāṇini also speaks of āchāryānī as the wife of an āchārya (IV.1.49).

EXOGAMY—Marriage must have been contracted outside the gotra. Pāṇini in one place refers to the formation of compound words showing two gotras united in marital relationship. (maithunikā) (IV. 3. 125). Pataṇjali instances (1) Atri-Bharadvājikā, (2) Vasishtha-Kaśyapikā, (3) Bhrigy-Angirasikā, (4) Kutsa-Kušikikā, and (5) Garga-Bhārgavikā, i.e. marriages contracted between two different gotras jointly designated (II.4.62; I.492). Most of these gotra names occur in Pāṇini's sūtras.

### CH. III, SECTION 4. WOMEN

Pānini refers to Woman in all the aspects of her life, as a girl, a maiden, a wife, a mother, a friend and a teacher. We obtain glimpses of her life inside the household as its virtual mistress in her capacity of patni, and in the larger public sphere of education (charanas) and citizenship (janapadas, IV. 1.175). As examples may be cited (1) Kathi, a female member of the Vedic Katha śākhā, and (2) Yaudheyī, a female citizen of the Yaudheya republic (saigha). The woman also figures as an ascetic as indicated in the title kumāraśramanā (II.1.70), i.e. an unmarried female mendicant, showing that women were also eligible for the ascetic order. It may be assumed that such women ascetics moved about freely in public as homeless wanderers (prabrajità, Gana-patha II.1.70). A veil of privacy was, however, thrown on the ladies of the royal household who were described as asūryam-paśyā (III.2.36), 'screened from the sun's gaze' and kept in their harems (cf. Kāśikā, rāja-dārāh).

MAIDEN—In the first part of her life (vayasi prathame IV.1.20) she was called kumārī, kiśorī and kanyā. Some women remained unmarried through life (kumāryām vayasi, VI.2.95) and were still called kumārī even in old age, e.g. vṛiddba-kumārī, jarat-kumārī.

There were exceptional cases of unmarried girls becoming mothers whence their offspring was called kānīna (IV.1.116), 'issue of a kanyā not formally married.' Manu counts kānīna as one of the twelve kinds of sons (Manu, IX.172; cf. Yāj. II.129). Patañjali makes the objection that kanyā, a virgin, and kānīna, her son, cannot go together. He holds that the term kanyā continued to be applied to a girl before her legal marriage (pums-ābhisambandha-pūrvaka samprayoga, II. 257).

A maiden of marriageable age was known as varyā, i.e. one to be wooed freely without restriction (anirodha, III.1.101). When she became engaged, she was called vrityā. No doubt parents exercised their choice in fixing proper matches, but girls of mature age were free to choose their husbands and were described as patinivarā (III.2.46). WIFE-The bride is called jani and the maids in attendance who conducted her to the prospective husband janyah. The newly wedded bride was called by the Vedic name sumangali, which Pāṇini cites as current in later Sanskrit also (sanijñāchhandasoh, IV.1.30). The term Jāyā was used for the wife with reference to the ideal of motherhood, whereas Paini as stated above denoted her religious function (IV.1.33). She is also called Jāni in the examples yuvajāni and vriddba-jāni (V.4.134). The term Palivatni was used to indicate that so long as her husband lived she was the mistress of the household (IV.1.32). Reference to polygamy can be traced in the word sapatnī (IV.1.35).

Păņini also refers to mantras repeated for captivating the hearts of lovers which were known as bridya (bridaya-bandhana, explained by Kāšikā, as vašīkaraņa mantra, IV.4.96).

An elderly sister marrying later than her younger sister was called didhishū and her husband didhishū-pati (VI.2.19; cf. Vedic Index, I. 307).

MOTHER—The practice of naming sons after their mothers found in the Vanisa lists was also known to Pāṇini. Sometimes the son is extolled for the virtues of his mother, e.g. bhadramātura, son of a noble mother (IV.1.115) and kalyānineya, son of a beautiful mother (IV.1.126). In cases of doubtful parentage the son was named according to the mother's gotra, e.g. Gārgika, son of Gārgī a female descendant of the Garga gotra; but such names after the mother involved social opprobrium (kutsana, IV.1.147).

CIVIC STATUS OF WOMEN—Women were distinguished as members of larger associations than the family. They were

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known by the gotras and the janapadas or States to which they belonged, e.g. Avanti (the lady of Avanti Janapada), Kunti (of Kunti), Kurū (of Kuru) (IV. 1, 176); Bhārgī (of Bharga Janapada, a part of the Trigarta country), Yaudheyi (a woman of the well-known Yaudheya republic); and similarly Pānchālī, Vaidehī, Āngī, Vāngī, Māgadhi, hailing from those Eastern janapadas implied in the sūtra (IV.1.178). The Ganapātha adds other names, such as Kārūshī, Kaikevī, Kasmīrī, Sālvī, Śaubhrevī, Śaukrevī, Bhāratī, Ausīnari, etc. It is also laid down that female names in the plural derived from gotra and janapada should be distinguished in their formation from those of the male members, and this distinction was brought out by retaining the female-denoting suffix, e.g. a bevy of women of Yaska gotra was named as Yaskyah (II.4.63) and Anga women as Angyah (II.4.62). A peculiarity in the names of women in the eastern country was the addition of the suffix ayana (IV.1.17), e.g. a female descendant of the Garga golra was called Gargyayani in the east corresponding to modern Gargain, a feature preserved specially in the Bhojapuri dialect.

Women also figured as students of Vedic schools (charaṇas, cf. sūtra IV.1.63 in which jāti includes both gotra and charaṇa), e.g. Kaṭhī, Bahvṛichī. Sometimes they were inresidents at the schools in what were called chhātri-śālā (VI.2.86).

Women also occupied the exalted position of teachers and were called āchāryā (IV.1.49, a counter-example of āchāryāṇī).

We have already seen that women sometimes devoted themselves totally to the pursuit of learning and religion as ascetics, and were called by the generic term kumārasramanā.

Women also pursued other cultural occupations. They took part in the cultural sports of the times. Pāṇini refers to the games of Eastern India (Prāchya-kṛīḍas, VI.2.74), e.g.

Śālabhañjikā (the game of plucking the flowers of the Śāla trees in blossom); Aśoka-pushpa-prachāyikā (gathering of the flowers of the Aśoka trees in blossom), etc. The Jātakas also mention these sports as uyyāna-kīḍikam (IV.376). Patañjali mentions śāktīkī, a woman warrior who specialised in the wielding of lance (IV.4.59; Bhāshya, IV.1.15; II. 209).

Women also paid attention to personal adornment and beauty (bhūshaṇa and maṇḍana, III.2.151). Mention is made of an ornament of the fore-head (lalāṭikā) and ear-rings (karṇikā, IV.3.65), and also to hair-dressing (keśa-veśa, IV.1.42). The lalāṭikā is seen as an ornament on the forehead of the earliest Indian women in the sculptures of Bharhut (Cunn. Bharhut, plate XXIII).

# CH. III, SECTION 5. SOCIAL FORMATIONS

These include in a descending order the following (1) Janapada, (2) Varņa, (3) Jāti, (4) Gotra, (5) Sapiņḍa, (6) Sanābhi, (7) Jñāti, (8) Saniyukta, (9) Kula, (10) Vaniša, and (11) Grihapati.

Pāṇini is acquainted with a number of Janapadas or States. To start with, a wandering Jana which was a Kshattriya clan, settled down in a particular region (Jana-pada), which came to be named after it. In time, other peoples also came to settle in it, whence arose the conception of a common citizenship binding them to the Janapada. It marked the evolution from the racial (Jana) to the territorial (Janapada) basis of citizenship embracing a variety of peoples. The citizens bound in loyalty to a common Janapada were called Sajanapadas (VI.3.85), nationals of the same State. The Vedic Bharata Jana, for instance, became settled in the region called Bharata, where were also settled later on other people giving rise to the territorial conception of citizenship replacing the clan. Thus it marked a great progress in political evolution.

The governing class of each Janapada, however, was distinguished from the rest of its citizens by the designation Janapadins (IV.3.100), or the citizens proper as an elect body or nucleus representing the original settlers.

A typical Janapada was peopled by members of the four principal castes and other mixed castes so that its population was heterogeneous.

VARNA AND JĀTI—Pāṇini mentions members of the same caste or Varna as savarņa (from samāna varņa, VI.3.85).

However, the term Jāti is used more often for caste. In the early Vedic texts and even in the Kātyāyana Śrauta Sūtra, it had only the sense of family (Vedic Index, Vol. I.281).

In the Ashṭādhyāyī an individual member of a caste is designated as bandhu in relation to his jāti (Jātyantāch-chha bandhuni, V.4.9). 'The affix chha (īya) is added to a word ending in the word jāti, when it denotes a bandhu.' The examples are Brāhmaṇa-jātīyaḥ, Kshatriya-jātīyaḥ, Vaiśya-jātīyaḥ. The Kāśikā says that bandhu in the sūtra means an individual; the jāti or class is in itself an invisible entity which achieves concrete form only through its component parts or bandhus. The term bandhu implies relationship, thus pointing to the fact that the jāti had evolved out of the common bond of mutual kinship. The word sabandhu in sūtra VI.3.85, indicates this idea of kinship, (samāna-bandhutva) uniting members of one caste.

SAGOTRA—Next to caste was Gotra. Gotra denoted the ancestral family from which its members traced their descent. Members belonging to the same gotra were called sagotra (VI. 3.85). The gotra name of a person on the basis of his gotra must have been a matter of considerable practical importance. In the Jātakas we often find the gotra name of a person asked along with his personal name. This is shown by Pāṇini having prescribed elaborate rules for the formation of gotra names, e.g. Garga, father; Gārgi, son; Gārgya grandson; Gārgyāyaṇa great-grandson.

SAPINDA—It is important to note that the word Sapinda is peculiar to the Sūtra literature; there is no trace of it either in the Sambitās, or the Brāhmaņas and Araņyakas. The Dharm-śāstra works explain Sapinda as blood-relations upto the seventh degree on the father's and fifth on the mother's side (Manu, V.60). Pāṇini refers to the Sapinda institution in the aphorism, Vānyasmin sapinde sthaviratare jīvati (IV.1.165), which states that a great-grandson was called yuvan when a more elderly Sapinda, i.e. either his uncle or grand-uncle was alive. SANĀBHI—Sanābhi is equal to samāna nābhi, i.e. those connected with a common nābhi or umbilical cord (VI.3.85), thus bringing within its fold all the blood-relations of different

degrees. In the Rigveda I.139.9, the seer Paruchchhepa says: our nābhis (umbilical cords) join us to Manu, Atri and Kaņva of old (Asmākain teshu nābhayaḥ). In Manu, Sanābhya is taken as Sapinda (cf. Kullūka, V.184).

INĀTI—Jūāti mentioned in sūtra VI.2.133 is explained by the Kāšikā as comprising 'all relations on the mother's and father's side' (jūātayo mātri-pitri-sambandhino bāndhavāḥ, VI.2.133). Pāṇini considers jūāti to be synonymous with sva, i.e. kinsmen or paternal relations (I.1.35).

SAMYUKTA—Jūāti and Samyukta occur in the same sūtra (VI.2.133), the latter formed a smaller social unit than the former. The Kāśikā says that the samyuktas included relations on the wife's side only, as brother-in-law and others (samyuktāḥ strī-sambandhinaḥ śyālādayaḥ), which means that the wife's jūātis were the samyukta relations of the husband. Among samyuktas Pāṇini himself mentions śvaśura-śvaśrū, i.e. father-in-law and mother-in-law (I.2.71), and śvaśurya or brother-in-law (IV.1.137).

FAMILY (KULA)—The family was considered to be the fundamental unit or nucleus of society in ancient India. Society was an aggregate of families, each comprising several members under the headship of the father, or in his absence the eldest brother, and as far as possible partaking of a common household. Pāṇini calls family a kula (IV.1.139; IV.2.96).

The word kulīna 'of eminent family,' (IV.1.139) indicated high descent. The epithet mahākula was indicative of a still higher family status. Pāṇini refers to the members of these distinguished families as mahākulīna, māhākulīna and māhākula (IV.1.141). On IV.1.139 the Kāšikā refers to a member of a superior family of śrotriya Brāhmaṇas as śrotriya-kulīna. Manu points out that a kula could be improved in its status by the following factors: (1) marriage, (2) study of the Vedas, and (3) performance of Vedic rites, (Manu, III.66; 184-186), to which the Mahābhārata echoing the same popular esteem for mahākula adds tapa, dama,

annadāna and samyag vritta (Udyogaparva, 36.23-29).

On the other hand some families suffered in social status by their neglect of Vedic study or lapses in morals; members of such degraded families were stigmatised as dushkulina or daushkuleya (IV.2.142).

VAMŚA—Vamśas could be both natural and cultural in their character. The spiritual lineage is called by Pāṇini Vidyā-sambandha, and the natural Yoni-sambandha (IV.3.77; VI.3. 23). The spiritual lineage is represented by a succession of teachers and pupils. The natural lineage is traced both on the father's and mother's side, as pointed out by Patañjali (IV.1.147; II.261).

It was the duty of the pupils to recite the succession-lists of the teachers of Schools to which they belonged. A few such spiritual genealogies are preserved in Vedic works.

Family pedigrees also seem to be carefully preserved by counting the number of its generations from the original founder. Sūtra, II.1.19, Samkhyā vamsyena, states that a numeral may be prefixed to the name of an ancestor (vamsya) and the compound thus formed will indicate the number of generations descended from him. As an instance Patañjali cites chavimsati-Bhāradvājam, meaning that there were twenty-one descendants in the line of Bhāradvāja (I.499).

A second instance is tripanchāsad-Gautamam (Pat. I.499 on II.4.84), meaning that there were already counted fifty-three generations of the descendants of Gautamas. These numbers afford valuable chronological data for computing their time allowing 25 years to a generation. Thus the first Bhāradvāja should be dated to about five-hundred years earlier and the first Gautama to about thirteen hundred years earlier than the time when the two illustrations were adopted. It may be noted as a striking resemblance that the Bribadāranyaka Upanishad also knows only of 57 generations of teachers. It may be surmised that perhaps this stock-example of fifty-three Gautamas dates from the time when the Vanisa lists were being

compiled in the Brāhmaṇa period. We may also note that the Gautama family with which this example is connected was an important family famous for its learning as represented in its several descendants like Aruṇa, Uddālaka Āruṇi and his son Śvetaketu Āruṇeya in the Upanishads.

The sūtra IV.1.163 mentions the two terms Vainsya and Yuvā which denoted the great-grandfather and the great-grandson respectively as being alive at the same time (Jīvati tu vainsye yuvā). As stated above, suffixes were added to indicate these distinctions, as in the series Garga-Gārgyāyaṇa.

GRIHAPATI—The smallest social formation was the Griha, its master being called Grihapati (IV.4.90), in whom vested the supreme authority of the family. Generally the father was the grihapati, but after him his eldest son. Sūtra IV.1.164 (Bhrātari cha jyāyasi) points out that the younger brother was called yuvā, when he was under the guardianship of his elder brother as the head of the family.

The family system was called gārhapata, of which Pāṇini cites the example Kuru-gārhapatam (VI.2.42), i.e. the family-system in the Kuru country, to which Kātyāyana adds another example, viz. Vṛiji-gārhapatam, the family-system in the Vriji country.

FAMILY RELATIONSHIPS—The sphere of relationships constituting the family is indicated by the following list from the Ashtādhyāyī:—

Mātā, Pitā (I.2.70); Pitāmaha; Pitrivya (uncle IV.2.36); Bhrātā, Sodarya (uterine brother, IV.4.109); Jyāyān Bhrātā (IV.1.164); Svasā (sister, I.2.68); Putra, Pautra (V.1.10); Pitri-shvasā (father's sister, VIII.3.84), Paitrishvaseya (her son, IV.1.132); Mātri-shvasā (mother's sister, VIII.3.84) and her son Mātrishvaseya (IV.1.134); sister's son or Svasrīya (IV.1.143); brother's son or Bhrātrivya (IV.1.144); Mātāmaha (mother's father, IV.2.36); Mātula (mother's brother, IV.2.36) and Mātulānī (maternal uncle's wife, IV.1.49).

The parents are called Pitaran by the Ekaśesha compound

which drops out mātā (I.2.70). Patanjali's illustration mātāpilarau on the vārttika, Abbyarbitam (II.2.34; 1.436) recalls Manu's view that the mother was entitled to greater esteem than the father (Manu, II.145). Pāṇini was probably of the same view as inferred from his mentioning Mātāmaha before Pitāmaha (IV.2.36). In the Ekasesha compounds like Pitarau (parents), Bhrātarau (brother and sister, I.2.68), Putrau (son and daughter, I.2.68), and Svasurau (parents-inlaw, I.2.71), it is always the word for the male that is retained and expresses the female also, which is probably indicative of his importance in a patriarchal society. The sūtra 1.2.67, Pumān striyā points to their relative positions. According to sūtras I.2.56 and 57 Pāṇini knowingly eschewed the discussion of Pradhana (Principal) and Upasarjana (Subordinate) from the Ashtādhyāyī. In his view the usage of society is the best guide in matters like defining the primary and secondary position of husband and wife, teacher and pupil, male and female, etc.

Pāṇini refers to a father with many children as Bahuprajaḥ (V.4.123), and to a grandfather as Putrapautrīṇa, who lived to enjoy the affection of his sons and grandsons in an expanded family (Putra-pautramanubhavati, V.2.10).

FRIEND—The domestic sphere of the home was extended in a wider social circle of friends. The Jātakas include mitta and suhajja, friends and acquaintances, in the gradation of relationships. (māta-pitu-mitta-suhajja ñāti-vaggo, Jātaka Vol. V, p. 132).

Pāṇini calls a friend sakhi (V.1.126), or mitra (V.4.150), and friendship sakhyam (sakhyuḥ bhāvaḥ karma vā, V.1.126), or also samgatam, comradeship (III.1.105). Pāṇini marks out a friend by his goodness of heart and the enemy by its wickedness (Subrid-durbridau, V. 4. 150). Friendship to last for a life-time is called ajarya. In the following interesting sūtra Pāṇini puts his seal of approval on the basic principle of friendship so often repeated in Sanskrit literature:

Sāptapadīnam sakhyam, (V.2.22).

Friendship is called sapta-padīna because it is accomplished through "Seven Steps" (sapta-pada). In the Atharva-veda, Atharva calls Varuna his sapta-pada friend, and Varuna pleased with the insight of Atharva and his consequent fitness to keep the Priśni cow reciprocates the same sentiment (Atharva, V.11.9, 10). The Mahābhārata also repeats the conception of sāpta-pada friendship (Vanaparva, 260.35; 297.23). We find the full explanation of sapta-pada in the Saptapadi ritual of marriage as given in the Gribya Sütras where the bridegroom makes the bride his saptapadi friend1 by repeating seven formulas beginning with Isha and Ūrja. The conception symbolised by the outer form of taking 'seven steps' appears to be very old, since the Rigveda also mentions Agni milking the Isha and the Urja for the Saptapadi (Rig. VIII.72.16). Originally the saptapadi friendship was perfected round the fire; later the phrase assumed a figurative sense. (Cf. Vālmīki Rāmāyana describing the friendship of Rāma with Sugrīva as agnisākshika, Kish. 8.4).

SERVANTS—In Pāṇini a new word kinikara (III.2.21) un-known in the Vedic and Brāhmaṇa literature denotes a domestic servant. The Gaṇa-pāṭha mentions several classes of them, e.g. (1) parichāraka (attendant), (2) parishechaka (one helping in bath), (3) utsādaka (one who helps in toilet), (4) udvartaka (one who rubs the body with unguents), (5) snātaka (II.2.9 and VI.2.151, yājakādi group), (6) pralepikā (a female servant who applies paste to the body), (7) vilepikā (a female servant who applies unguents before bath), (8) anulepikā (a female servant who applies them after bath), (9) anuchāraka (an assistant), (10) maṇi-pālī (a female to keep charge of jewellery, IV.4.48), (11) dvāra-pālī (a female door-

<sup>&</sup>lt;sup>1</sup> For wife as a friend, see Tailtiriya Sainhitā, VI. 2.9.2. The same sentiment is echoed by Kālidāsa in Raghu. VIII.67: Grihini sachivah mithah sakhā.

keeper), (12) danda-grāha (bearer of staff) and (13) chāmara-grāha (bearer of fly-whisk, IV.1.146). Most of these servants formed part of the establishment in the king's household and were in the service of aristocratic or high families as stated in the Arthasāstra and the Kāmasūtra. In the sūtras, Pāṇini mentions danvārika, chamberlain (VII.3.4), vaivadhika, carrier of load (IV.4.17) and udaka-hāra or udahāra watercarrier (VI.3.60).

GUESTS—Hospitality (ātithya, V.4.26) to strangers and guests was a cardinal virtue of household life. The hospitable man is referred to as ātitheya (atithau sādhuḥ, IV.4.104). The Grihya Sūtras lay down detailed rules for honouring a guest on his first arrival. Pāṇini mentions pādya and arghya (V.4.25) in the order in which they were offered to a guest, although grammatically contravening his own rule II.2.33. He also borrows from the Vedic terminology the word goghna, i.e. one for whom a cow was dedicated (III.4.73). A distinguished guest like a king, a priest, a preceptor, or a respectable relation was considered worthy of this honour. All these persons are incidentally mentioned in a sūtra (VI.2.133).

# CH. III, SECTION 6. FOOD AND DRINKS

(Anna-Păna)

The Ashtādhyāyī contains material for an important chapter on the history of food and drinks in ancient India. Food is called anna, and the eater of food annada (III.2.68). The word bhakta which also occurs in the Jātakas (yāgubhattādīni, Takkala Jāt. IV.43) and the Arthasastra (Text II.24) primarily denoted anna, as in sūtra VI.2.71 (Bhaktākbyās-tad-artheshu) where names of edible articles are implied. A servant or wage-earner whose daily remuneration was given to him in the form of food was called bhakta or bhaklika, a practice which seems to have been more true in the case of agricultural labour. The Arthasastra says that food and wages (bhakta-vetana) were paid to the artisans, but food only to agricultural labour (Arth. Text II.24). Patanjali is even more specific: "The meaning of the root krishi is not restricted merely to the actual operation of ploughing, but it also implies all accessory efforts by way of providing food (to labour), seed and bullocks, etc. which together contribute to the complete fulfilment of the sense of the verb' (Bhāshya, II. 33, Yadasan bhakta-bija-balivardaih pratividhanam karoti sa krishy-arthab). The other sense of bhakta, viz. boiled rice is seen in sūtra IV.4.100, which prescribes a suffix to denote a thing that is good for bhakta (Bhaktan-nah). Kāsikā's examples bhaktah salih and bhaktas-tandulah show that bhakta here stands only for boiled rice, a meaning which it still retains in Hindi bhāt

CLASSIFICATION OF FOODS—(i) Bhojya—In a simple-looking sūtra, round which controversy has raged, Pāṇini explains the meaning of bhojya:

Bhojyam bhakshye, VII.3.69.

It means that the word bhojya is irregularly derived in the sense of bhakshya. To this Katyayana raises an objection that bhakshya is not to be taken as a synonym of bhojya, since bhojya includes all articles of diet, both solid and liquid, while bhakshya denotes only solid food. Kātyāyana suggests that the proper word to express the sense of bhojya is abhyavahārya, 'worthy of being taken in.' Patañjali disagrees with Kātyāyana and defends Panini by saying that in such older examples as abbhaksha and väyu-bhaksha (one who takes in water or air) even non-solid substances occur as the object of bhakshana, and hence Pānini's idiom in equating bhojya with bhakshya is unobjectionable. All subsequent commentators have accepted Patañjali's liberal interpretation of bhakshya in this sūtra, viz. that it stands both for solid (khara-visada) and liquid (drava) foods (cf. Kāśikā, Iha bhakshyam-abhyavahāramātram). Dr. Goldstücker, however, raised his voice of dissent against Patañjali and maintained that 'in Pāṇini's time, which preceded the classical epoch, bhakshya must have been used as a convertible term for bhojya; while at Kātyāyana's period, this rendering became incorrect, and the sūtra needed correction' (Pānini and his Place in Sanskrit Lit. p. 97). Dr. Goldstücker's statement, however, does not hold good even for the whole of the Ashtadhyayi, since in Panini's own sutra II.1.35 (Bhakshyena miśrikaranam) as read with IV.2.16, (Sainskritam bhakshāh) bhakshya denotes solid food only and not liquids, as is evident from the illustration in the Bhāshya, i.e. gudena samsrishtā guda-samsrishtā, guda-samsrishtā dhānā gudadhānāh (I.387), which is accepted by all subsequent commentators. (Cf. Kāśikā, IV.1.16; Khara-viśadam abbyavahāryam bhaksham ity uchyate; also II.1.35). Here bhakshya cannot be said to be strictly synonymous with bhojya, if, as rightly argued, bhojya included both liquid and solid diets. The correct view, we submit, is that bhakshya has a two-fold sense in the Ashtādhyāyī, a more general sense in sūtra VII.3. 69 and a restricted one elsewhere. As for the contention of Dr.

Goldstücker (*ibid*, p. 97) that in the classical language *bhakshya* is different from *bhojya* and applies to solid food only, we submit the following three examples from Kautilya, where exactly as in Pāṇini both meanings prevail side by side:

(a) Māmsa-surā-bhakshya-bhojana. (Arth. Text. p. 214),
 i.e. eating of meat and other solid foods and drinking of liquors;

(b) Sūdo bhakshakāro vā bhaksha-bhojanam yācheta
 (p. 239), i.e. the cook or one who prepares food may ask for some bhaksha and bhojana;

(c) Bhakshyeshu smarati (p. 252), i.e. the king at meals remembers (his courtier).

In the above examples (a) and (b) distinguish between the meanings of bhakshya and bhojya, while (c) uses bhakshya as synonymous with food in general. It is this latter sense that holds good in Pāṇini's sūtra VII.3.69.

(ii) Bhakshya and Miśri-karana. For the rest of the Ashṭādhyāyī Pāṇini has distinguished bhakshya (II.1.35) from anna (food in general, II.1.34), and it is, therefore, right to take it as denoting khādya (eatable or solid) articles only. Pāṇini's own examples of bhakshyas as given in sūtra VI.1.128 are (1) palala (meat), (2) sūpa (pulses) and (3) śāka (vegetables), which are compounded with words denoting relish-giving articles of diet like ghrita, gudu, etc. According to Kāśikā's gloss on VI.2.154 (Miśram chānupasargam asandbau) guda, tila and ghrita are examples of misra articles. It follows that for improving the taste it was permissible to have any suitable combination with the principal bhakshya food. The process of miśrikarana, mixing therewith, is the same as samsrishta (IV.4.22). The sutra Samsrishte provides that the suffix thak is added to a word when the sense is 'mixed therewith.' According to Pānini chūrna (IV.2.23) lavaņa (IV.2.24) and mudga (IV.2.25) are ingredients which are used in 'mixing therewith.' Kātyāyana, perhaps too subtly, thinks that there is something wrong in salt being considered as an article for 'mixing,' since it is not an eatable by itself but an adjunct of food (guṇa) being one of the six rasas. (Cf. Kātyāyana on IV.4.24; II.330). But Pāṇini understands salt not merely as a rasa, but to be a baṇya or material commodity (cf. lāvaṇika, a dealer in salt, IV.4.52), and therefore a mixable article with food.

- (iii) Vyañjana and Upasikta. Whereas miśra articles are mixed at the option of the eater, the use of vyañjanas is obligatory to make the food tasteful. Pāṇini takes vyañjana in the sense of upasechana, (i.e. ingredients of seasoning to improve the taste, IV.4.26, Vyañjanair-upasikte), as example of which Patañjali mentions dadhi (curds) (Annena vyañjanam, II.1.34) and the Kāśikā on Pāṇini II.4.12 mentions both curds and butter (dadhi-ghṛitam). The nature of any dish determines whether a particular article bears to it the relation of a vyañjana or miśrīkaraṇa, i.e. an indispensable or optional ingredient of mixing. For example, the Kāśikā takes ghṛita as an article both for mixing and for seasoning the food (Kāšikā on VI.2.128 and 154).
- (iv) Sainskrita. This term (IV.2.16 and IV.4.3) denotes such food as is ready for eating direct from its place of preparation, e.g. groats ground in a hand-mill. Patañjali further points out that barley which is being pounded in the mortar is not in an eatable stage until it is boiled (Bhāshya, IV.3.25; II.307). Pāṇini mentions dadhi (IV.2.18), udaśvit (butter-milk, IV.2.19) and milk (kshīra, IV.2.20) as examples of sainskrita food. The Kāšikā instances apūpa or sweet bread baked in an oven as coming under this class (bhrāshṭrā apupāḥ, IV.2.16).

DIFFERENT FOODS—A list of the principal food products and their preparations mentioned in the Ashtādhyāyī is given below:—

#### I. Grains.

1. Cereals. (i) Sāli (V.2.2), a kind of rice growing

in winter which is replanted and called jadaban.

- (ii) Mahavrihi (VI.2.38). One of the best known varieties of rice mentioned by Charaka in his list of principal kinds of rice (Charaka Sainhitā, Nidāna-sthāna, IV.6). Suśruta mentions mahāšāli (Sūtra-sthāna, 46.7), which was perhaps a kindred variety of mahāvrīhi. Patañjali praises the sāli rice grown in Magadha (I.19). This variety seems to have survived for more than a thousand years. According to Yuan Chwang: 'There is an unusual sort of rice grown here (Magadha), the grains of which are large and scented and of an exquisite taste. It is specially remarkable for its shining colour. It is commonly called "the rice for the use of the great." (Beal, Siyuki, II.82). This appears to be the rice called Mahāsali and Sugandhikā (Julien). Hwui Li, the biographer of the Chinese pilgrim states that the Mahāṣāli rice was grown only in Magadha and that Yuan Chwang, during his stay at Nālandā, was entertained with this special kind of rice (H. D. Sankalia, Nalanda, pp. 192-93). Pāṇini's acquaintance with the mahavrihi rice of Magadha must be due to his intimate knowledge of eastern India.
- (iii) Hāyana (III.1.48) a kind of vrībi (the rainy crop which is not transplanted); included by Charaka amongst the nine varieties of well-known rice. In the Kāṭhaka Saṃhitā and the Śaṭapatha Brāhmaṇa the term appears as a designation of a species of red rice (Vedic Index, Vol. II.502).
- (iv) Yavaka (V.2.3). Both Pāṇini and Charaka mention yavaka as the name of a variety of rice. Pāṇini refers to it also in the Gaṇa-pāṭha (yava vrīhishu, V.4.3, from which we get yavaka). The same gaṇa also contains jīrṇa śālishu, from which we get jīrṇaka as a kind of rice, probably the same as jūrna of Charaka (Sūtra-sthāna, XXVII.18).

<sup>&</sup>lt;sup>1</sup> Hāyanaka-yavaka-chīnak-oddālaka-naishadhetkaṭa-mukundaka-maha-vrīhi-pramodaka-sugandhikānām navānām. Also Sūtra-sthāna, XXVII.12, where the name is hōyana as in Pāṇini, not bāyanaka.

- (v) Shashtikā (V.1.90), so called because it took sixty days to ripen (shashti-rātreņa pachyante); it was considered as one of the best varieties according to medical authorities (Charaka, Sūtra-sthāna, XXVII.13).
  - (vi) Nīvāra (III.3.48), a wild inferior variety.

Păṇini refers to the bank (kūla) of a river called Devikā (VII.3.1), on which was grown, according to Patañjali, a special kind of rice called dāvikākūla śāli (III.316). The river Devikā is identified with Deg flowing through Jammu and Sialkot, still famous for its excellent rice.

- 2. Pulses. Mudga (IV.4.25); Māsha (V.1.7; V.2.4); Kulattha (IV.4.4), Dolichos uniflorus, mentioned as an article to be eaten with food (samskāraka dravya). Charaka enumerates kulattha amongst pulses (śamī-dhānya, Sūtrasthāna, XXVII.26).
- 3. Other Grains. Yava (barley, V.2.3); Yavānī (a kind of inferior barley, IV.1.49); Anu (V.2.4) a small grain (Panicum miliaceum) which is the principal food of the poorer people in the Sindh-Sagar doāb and other parts of the Punjab; Gavedhukā¹ (IV.3.136), Coix barbata, boiled with rice or barley in preparing gruel; and Tila (V.1.4; II.7).

# II. Cooked Foods (Kritanna).

(1) Odana (IV.4.67), boiled rice, also called bhakta (IV. 4.100), must have been a favourite diet, since as many as six varieties of rice are mentioned in the Ashṭādhyāyī, of which some varieties were considered specially good for preparing bhakta (IV.4.100). Odana was either boiled alone in water, called udakandana and udaudana (VI.3.60), or prepared in combination with meat (māmsaudana, IV.4.67). Vegetables and soups (śāka, sūpa, VI.2.128) were other ingredients eaten with boiled rice. Charaka giving a list of

<sup>&</sup>lt;sup>4</sup> Kālyāyana considers the reading of Gavedhukā in the Bilvādi gana (IV.3.136) as authentic (Bhāshya, II.323). The same gana also contains godbūma and masūra.

thirty-five kinds of rice prescribes the use of ghrita, taila, phala, māsha, tila along with odana (Sūtrasthāna, XXVII.257). In India odana is most commonly eaten with sūpa of various pulses. According to the Mahāummage Jātaka¹ the food of a labourer consisted of bhatta from barley eaten with sūpa. According to Patañjali odana made a decent dish to feast Brāhmaṇas (II.3.65; I.467) and friends (I.1.72; I.182). He repeats several times the phrase, Vindhyo vardhitakam (I.4.24; I.327), comparing humorously the heap of rice served on a plate with Mount Vindhya. (Bhāshya, I.220, Ekascha taṇḍulah kshut pratighāte' samarthastat-samudāyaś-cha vardhitakam samartham). Vindhya vardhitaka is a common sight in the eastern districts of the U. P. where rice is the staple food.

(2) Yavāgū (IV.2.136). Barley gruel was a papular food like odana, as can be gathered from its repeated mention in the illustrations to sūtras. The Jātakas mention yāgu as a popular food. Patañjali considered yavāgū to be a liquid diet (Bhāshya on VII.3.69). Pāṇini specially mentions the yavāgū eaten in the Sālva country (Sālvikā Yavāgū) which like the breed of Salva bulls enjoyed wide reputation (IV.2.136, Go-yavāgvoś-cha). The ancient Sālva janapada consisting of a confederacy of six member states most probably coincided with the vast territory stretching from Alwar to Bikaner in Rajasthan. People in these parts are still quite fond of eating gruel, which is of two kinds, viz. (1) thin lapsi, that is sweet in taste and eaten by the rich, and (2) thick rābarī that is saltish and prepared by the poor. Pāṇini also mentions ushnikā in sūtra V.2.71 as a samjñā word, which according to the Kāšikā was the name of a yavāgū of very thin consistency (alpānnā yavāgūr-ushnik-ety uchyate). In sūtra II.2.34 Pāṇini describes nakham-pachā, 'nail scotching.' The Kāśikā

<sup>&</sup>lt;sup>1</sup> Cf. Mahāummaga Jātaka, Vol. VI. p. 372; mutthim mutthim katvā appasūpam yava-bhattam bhunjamānam. Cf. also Jāt. Vol. I., p. 486 describing bhatta of inferior rice for poor men (tandulamanassa bhattam).

connects nakhampachā with yavāgū. We know from other sources that yavāgū was of two kinds, peyā and vilepī. The peyā or thin variety was drunk like saktu dissolved in water, while vilepī or paste-like yavāgū was licked with fingers of the hand. The ushnikā in sūtra V.2.71 must be the peyā variety, whereas the nakham-pachā yavāgū was called vilepī which scotched the finger ends when licked hot.

- (3) Yāvaka (V.4.29). According to Patañjali yāvaka was made by pounding barley with pestle and mortar to remove the chaff, and then boiling its pearl grain in water or in milk with sugar added to it. Charaka calls yāvaka a steamed food (svinna bhakshya, Sūtra-sthāna, XXVII.259). The Arthaśāstra lays down that prepared yāvaka must weigh twice the original quantity of barley cooked (Arth. Text. II.15).
- (4) Pishṭaka (IV.3.147). Pishṭa (IV.3.146) denoted the ground paste of any grain. Articles prepared by mixing pishṭa were generally called pishṭamayam. Pishṭaka on the other hand was a special preparation, probably the cakes made of powdered rice. Suśruta counts pishṭaka among cooked delicacies (kṛitānna varga) (G. P. Majumdar, Food, Indian Culture, I.413).
- (5) Samyāva (III.3.23). Kullūka explains samyāva as a sweet preparation made with gbṛita, milk, guḍa, and wheat-flour (Manu, V.7), almost the same as modern chūrmā. Suśruta also includes it among confectionaries (G. P. Majumdar, ibid, p. 413).
- (6) Apūpa (V.1.4). Sweet cakes made of wheat flour and ghṛita, a dainty confectionary prepared even now. The Kāšikā mentions oven-baked apūpas (IV.2.16). The Chāndra Vṛitti and the Kāšikā read abbyūsha (variant form abbyosha)

Bhāsbya, 11.307; Idam tu na sidbyati aulūkhalo yāvaka iti. . . . Na cha yāvaka ulūkhalād evāpakrishya abbyavahriyate' vašyam randhanādīni pratikshyāni.

in the apūpādi gaṇa. It must have been an ancient food since the Kāmasūtra also mentions abhyūsha-khādikā as a sport in which boys and girls took part by eating the abhyūsha (parched grain) (Kāma-sūtra, ch. IV).

(7) Saktu (VI.3.59). Pāṇini mentions saktu (modern sattu) mixed with water as udaka-saktu or udasaktu, but Patañjali mentions dadhi-saktu, i.e. groats eaten with dadhi as the seasoning ingredient (I.1.57; I.149). Bhrāshtra or the place for frying is also mentioned (VI.2.82).

Another article of diet when mixed with water was called udamantha or ndaka-mantha (VI.3.60). Mantha was a kind of groats made from fried rice (Kātyāyana Śrauta, V.8.12) and generally mixed with milk (manthah kshīra-samyuto dhānā-saktuh). The special word udamantha referred to such sattu when taken only with water. This food is now called bhujiyā ke sattu. (For mantha, see also Sat. Br., II.5.2.6).

(8) Kulmāsha (V.2.83). Pāṇini mentions kulmāsha as a food which was ceremoniously eaten on a particular day in the year (Tad-asminn-annam prāye samijnāyām, V.2.82). The particular Full-Moon day on account of its association with kulmāsha was known as Kaulmāshī Paurņamāsī.

What was the nature of the kulmāsha food? In the Nirukta² kulmāsha is an inferior food, which is confirmed by the Chhāndogya Upanishad where the people of Ibhyagrāma (richmen's village) in Kurukshetra begin eating kulmāsha after the crops were damaged by hail-storm (I.10.2). The Kummāsa-piṇḍa Jātaka (No. 415) refers to it as the coarse food of the poor (dalidda) workman which he could carry in the form of a ball or lump, and to which on account of his

<sup>&</sup>lt;sup>1</sup> Also prithuka, boiled rice, crushed and dried (chiruve); cf. Kāšīkā, guda-prithukāb, II.1.35; Amara, Apakvani paulir-abhyūshab, i.e. half-ripe corn fried in fire.

<sup>&</sup>lt;sup>2</sup> Kulmāshan chidādara ity-avakutsite, Nir. I.4 Dr. Sarup renders it as sour gruel (Cf. Amara, kulmāsha::yavaka; later Koshas add kāñjika yavaka. Also Vedic Index where the meaning of sour gruel is accepted.

poverty he could not even add a little fat and jaggery (atelam, alonikam).1 Kulmāsha2 thus appears to have been a coarse thick gruel prepared by stewing beans, maize, or any inferior grain in a covered vessel with a little water (abbodaka) and also adding guda and oil to it. Yāvaka was different from kulmāsha in that it was first pounded in a mortar (made aulūkhala, Bhāshya, II.307) and then boiled like the latter. Charaka considers kulmāsha as a steamed food (svimnabhakshya), heavy to digest and dry in effect (Sūtra-sthāna, XXVII.259). The Kaulmāshī day of Pānini most probably coincided with the Full-Moon day of Chaitra, and the Vatakini of Kātyāyana with the Full-Moon day of Kārttika, when kulmāsha and vataka cakes of māsha paste form the ceremonial food respectively. The Hindi equivalent of kulmāsha is ghughri, (Cf. Bhojana-kutūbala, P. K. Gode, A. B. O. R. I., XXII.256).

- (9) Palala (VI.2.128). A sweetmeat made of pounded sesamum and sugar or guḍa, as illustrated by Kāśikā, guḍena miśram palalam guḍa-palalam (VI.2.128), and tila-palalam (VI.2.135). Its modern equivalent is tila-kuṭa.
- (10) Chūrṇa (IV.4.23). It means wheat flour fried on a pan and mixed with ghi and sugar. In this form it was put inside cakes or apūpas, which in Pāṇini's time were called chūrṇinaḥ apūpāḥ (Kāsikā, corresponding to modern gūñ-jhā or guñjhiyā). The chūrṇa preparation is still known as chūn in eastern districts like Banaras and kasār in western districts like Meerut.

<sup>&</sup>lt;sup>1</sup> Ját. HI.406; on p. 408 sukkbāya alonikāya cha. . . .kummāsapindiyā. The commentary explains sukkhāya as nisnebāya, and alonikāya as phānitavirahitāya, adding that alonikā meant nipphānitattā, absence of jaggery.

<sup>&</sup>lt;sup>2</sup> Kāikā (also Chandra) includes kulmāsha in the gudādi group (IV.4.103) and illustrates it as kaulmāshika mudga, i.e. mudga, suitable for making kulmāsha. Chakrapāņi on Charaka, Sūtra-sthāna, XXVII.260, explains kulmāsha as yavapishtam usbņodaka-siktam īshatsvinnam apūpī-kritam kulmāsham āhub.

#### III. Sweets.

Pāṇini mentions the following sweets:-

- (i) Madhu, honey from which is derived the general term madhura (V.2.107) denoting all confectionaries. Honey prepared by the common bee is referred to as kshaudra (IV.3.118) treated as a samjñā word.
- (ii) Guḍa (IV.4.103), molasses, a universal product of sugarcane juice. Pāṇini's phrase 'excellent for making guḍa' (guḍe sādhu) refers to some special variety of sugarcane yielding better quality of guḍa. Even now this consideration prevails with experienced farmers in selecting sugarcane seed for the next crop. Pāṇini refers to vast cane plantations or forests of sugarcane as ikshu-vaṇa (VIII.4.5).
- (iii) Phāṇita, implied as a counter-example in sūtra VII.2.18 which mentions phāṇṭa. Phāṇita denotes inspissated juice of sugarcane boiled down to thick consistency, a preparation now called rāb, from which after crystallisation sugar is prepared.
- (iv) Sarkarā, granulated sugar prepared from sugarcane.IV. Milk Products.

Milk products are called gavya and payasya (IV.3.160) of which curds, milk and butter-milk (IV.2.18; dadhi-payasi II.4.14) are mentioned as important food articles. Phānṭa as given in sūṭra VII.2.18 has the sense of 'made without effort' (anāyāsa). The Kāsikā understands it as a hot decoction, but the epithet anāyāsa points to its old meaning of butter produced from the cream of the day's milk (ayāṭayāma, \$aṭapatha Brāhmaṇa, III.1.8), as opposed to nāvanīṭa churned from curds of the previous day's milk, for which a new classical word, haiyaṃgavīna (V.2.23) had come into use in Pānini's time.

Pănini has an interesting sūtra, Pănam deśe (VIII.4.9), which apart from its grammatical interest (i.e. cerebralisation) acquaints us with the fact that different countries were named

after their popular drinks. Of the four illustrations on this sūtra the first cited by the Kāšikā and repeated in the Chandravritti (VI.4.109) refers to the people of Usinara country as being fond of drinking milk (Kshīra-bānā Ušīnarāh). The information seems to be grounded in fact. Usinara or the ancient Sibi janapada had its capital at Shorkot near the bank of the lower Chenab, and roughly corresponded with parts of Jhang, Multan and Montgomery districts famous for their breed of cows. The geographical term Pāna-Sindhu (Kāśikā, VII.3.9) should be identified with the south-half portion of Sindhu janapada (Sind-Sagar Doab) which was an extension of Usinara for its prosperity in cattle wealth and of which the inhabitants were fond of dairy products in their dietary. Charaka informs us that the people of Sindhu (Saindhavāh) were fond of milk (Chikitsä-sthäna, 30-31). Saktu-Sindhu denoted the northern portion of Sindhu janapada where the people eat groats to this day. Eastern India was fond of wines (surā-bānāh Prāchyāh) Bālhika of sauvīra (a kind of sour drink); Gandhāra of kashāya wine.

The Mahābhārata mentions mathita (whey) as a favourite drink of the people in the Vāhīka country, and Patañjali refers to māthitika shopkeepers selling mathita (III.328, mathitam panyam asya māthitikaḥ).

## V. Vegetables and Fruits.

Among auxiliary articles of food Pāṇini refers to śāka (leafy vegetables), bhājī (cooked vegetables, IV.1.42; also called śrāṇā in sūtra IV.4.67), sūpa (juice of boiled pulses, VI.2.128), prepared from pulses like mudga and māsha. Mention is also made of the practice of munching with food such digestive roots as radish and ginger, called upadamśa (III.4.47).

Among fruits amra (mango, VIII.4.5) and jambū (rose-apple, IV.3.165) are mentioned. Generally the name of the tree denoted also the name of the fruit (IV.3.163, Phale-luk).

COOKING—Cooking is called pakti (III.3.95). Frying-pans were used for cooking (ukhā, ukhya, IV.2.17). The process of roasting on spikes is referred to as śūlā-karoti (V.4.65) and articles so roasted were known as śūlya (IV.2.17). The commentators understand this process to apply only to meat preparations. Pāṇini explicitly refers to māmsa in sūtra IV.4.67. Kauṭilya also mentions shops of cooked meat (pakva-māmsika, II.36) and śūlya articles of food.

The cooks in the time of Pāṇini derived their names from two factors, firstly from their specialised skill in preparing particular dishes, and secondly from the quantity which they were capable of handling. The first point is perhaps referred to in VI.2.129, in which the names of various classes of cooks are presumed, as deva-sūda and bhājī-sūda, i.e. cooks attached to temples and those expert in the cooking of vegetables.¹ Even at present the bhāji-sūda is a specialist whose services are in demand at the time of big feasts for making vegetables.

The practice of designating cooks on the basis of their capacity to cook a particular measure or quantity of food is referred to in sūtra V.1.52. This may have been a criterion to determine their wages and fitness for employment in domestic and festive cooking. Pāṇini speaks of cooks handling different quantities of food-stuffs, equal to an āḍhaka, āchita or pātra measure (V.1.53). Kātyāyana in a special vārttika refers to the cooking of a drona-measure, from which a female cook competent to handle this quantity was known as drauņī or drauņikī (V.1.52; II.352). There were also female cooks handling larger quantities like two āḍhakas, and named dvyāḍhakī, dvyāḍhakīnā (V.1.55; II.352). The popularity of these epithets is seen from another rule in which Pāṇini gives as many as four variant froms for designating one who could cook a couple of kulija

<sup>&</sup>lt;sup>1</sup>Cf. Artha. Text, V.1, referring to sūda and bhakshakāra as saucemaker and sweetmeat-maker respectively. The Kāšikā. understands Devasūda and Bhājīsūda as place-names.

measures, e.g. dvikulijiki dvikulijinā, dvikulijā, dvaikulijiki (V.1.55).

The same principle held good in the case of utensils which were named from the quantity that they could contain (sambhavati, V.1.52) as prāsthika, kauḍavika, khārīka, or the quantity that could be cooked in them (Parimāņe pachaḥ, III.2.33). This naming of cooking vessels according to their capacity was of practical use at the time of borrowing utensils for big feasts.

CUSTOM OF FEEDING DOMESTIC SERVANTS. Pāṇini refers to the custom of giving food to a domestic servant as part of his wages fixed by custom (niyukta, IV.4.66). This practice was so widely prevalent that special terms were used to indicate it, e.g. a servant who got cooked rice as his food every day was called odanika or bhāktika (odanikī for a female servant). According to Pāṇini the customary payments of food to domestic servants were of an obligatory nature:

Tad asmai diyate niyuktam (IV.4.66)

'The affix thak is added after the name of food which is to be given as a customary payment.'

The word niyukta comes from niyoga, which Patañjali explains as a legal obligation like a debt.¹ For example, if one had engaged a servant for a paṇa per day, the paṇa was a niyukta charge; the payment of which at the end of the day was obligatory. We have to think of those circumstances in which an article of food became due in a like manner. We read in the Arthasāstra of bhakta-karmakaras, i.e. servants engaged on the stipulation of being given daily food. In actual rural economy there has always existed the custom of giving a portion of the mid-day meal to certain domestic servants and menials, like the scavenger and the water-carrier, etc. Their daily wages in respect of

<sup>&</sup>lt;sup>1</sup> Yad-yasya niyogatah karyam-rinam tasya tad-bhavati. (Bhashya, I.391; in the course of explanation of the varttika on sutra, II.1.43).

the services rendered to the various families consist only of food articles which they are required to collect in the course of the day from the houses served by them. The village Brāhmaņa also by virtue of his privileged position as Purohita gets a portion, which is no doubt referred to in the illustration agrabbojanika (agre bhojanam asmai niyuktam dīyate) cited by the Kāšikā. In this case the members of the household cannot partake of their food unless the agrabbojana has been set apart. It is to be noted that this supply of food (niyukta bbaksha) is part of the stipulated wages for which the servant is employed. According to Panini the food thus supplied might be of different kinds, viz. cooked vegatables (śrānā), rice cooked with meat (māmsa and odana, IV.4.67), or full meal, (bhakta, IV.4.68). One getting cooked vegetables would be called sranika, or sraniki in the case of a female; similarly mānisika (getting meat as food), odanika (geting boiled rice) and bhāktika. The bhāktika was the same as bhakta-karmakara of Kautilya, receiving a full meal every day. This practice worked out in a manner that the servant could make a complete meal with the different articles received from different houses. The same person would be a śrānika in respect of one family, odanika in respect of a second, and āpū pika in respect of a third. For example, a female waterdrawer (udahārī) agreed to take vegetables from one house, soup from another, meat and rice from a third and so on, and thus she earned her full meal. If she served a confectioner (āpūpika) she would naturally receive an apūpa a day as her payment for work, and with reference to that particular house she would be called apūpikī, i.e. a female receiving an apūpa every day.

Such an arrangement alone would be responsible for the origin of different designations of servants based on the names of different articles of food as niyukta share. This is a living institution in North Indian villages upto this time where

cash payment is practically unknown for domestic and menial services rendered.

INVITATIONS—Pāṇini refers to two kinds of invitations to dinner, viz. nimantraṇa and āmantraṇa (III.3.161). Patañ-jali explains the former as an invitation to take food at sacrifices (havya) and śrāddha (kavya), the acceptance of which was obligatory. Āmantraṇa, however, was an invitation to a feast extended to friends and relations and therefore less formal (āmantraṇań kāmāchāraḥ, II.165).

PLATE-LEAVINGS-Pāṇini refers to special terms applied to food-leavings when served in different kinds of utensils. (Tatrodbritam amatrebbyah, IV.2.14). The domestic servants enjoy customary rights to receive particular leavings and hence the necessity of special words in the language. The Kāsikā records three such leavings of rice-food, viz. śārāva, māllaka and kārpara. The first referred to the leavings from the plates in which rice was actually served for eating, and this must have been the share of the scavenger, as it is up to this day. The second, viz. māllaka, was the leavings in the pot (mallaka) from which it was served, and this must have been the share of the family barber (napita). The third or kārpara odana was that which was left behind in the cooking pot and as such must have been the customary share of the cooks. The Kāšikā explains uddbrita as bhuktochchhīshta, and the Nanartharnava Kosha as bhuktojjhita (Vol. II, p. 42). The word ujibita is the Prakrit form of Skt. uddbrita.

As to food-habits, Pāṇini refers to them as fasting (vrata, III.1.21), gluttony (audarika, V.2.67, ghasmara, admara, III.2.160), and moderation (suhita, II.2.11).

DRINKS. Pāṇini mentions the following terms in connection with drinks:

- (1) Sundika—Drinking booth (IV.3.76), Saundika—Vintner (IV.3.76).
- (2) Āsuti—Distillery (V.2.112). Āsutīvala—Distiller (V.2.112).

- (3) Madya (intoxicating liquor, III.1.100);
- (4) Surā (wine in general, II.4.25).
- (5) Maireya and (6) Kāpišāyana, names of special wines.

These are new classical words unknown to older Vedic literature.

MAIREYA—Maireya was a popular drink. The word is unknown in the Brāhmaṇa and Āraṇyaka literature, which suggests its origin in the post-Vedic period. The Buddha found its use so common as to lay down a prohibition against it. Pāṇini's sūtra is Aiŋāni maireye (VI.2.70).

'The first syllable of the word preceding maireya, gets the acute accent, when that word denotes an ingredient of maireya.' It implies that the word maireya enters into a compound with words denoting its ingredients.

Leaving the particular grammatical point aside, we infer from the sūtra that Pāṇini had a knowledge of the ingredients (aṅgāni) of maireya liquor. It is not possible to understand the rule properly without a knowledge of these ingredients.

The Arthasāstra of Kautilya enumerates six varieties of liquors, viz. medaka, prasannā, āsava, arishta, maireya and madhu (Arthasāstra, Text, II.25). It also gives the full recipe of maireya:

"Prepare a decoction of meshasringi bark, mix it with jaggery (guḍa) and add the powder of long pepper (pippali) and black pepper (maricha); to it the powder of triphalā may be added optionally,—this is the recipe of maireya."

In the above recipe meshasringī, pippalī, maricha and triphalā belong to one group, and guḍa to another. Further light on this division is thrown by the two illustrations given on Pāṇiṇi's sūtra, by the Kāšikā:

गुडमैरवः । मधुमैरेयः । मद्यविशेषो मैरेयस्तस्य गुडविकारस्य गुडोऽङ्गं भवति, मधुनो मधु ।

'मेषश्रुःङ्गीत्क् वक्वायाभिषुतो गुडप्रतीवापः पिप्पली-मरिच सम्भारस्त्रिकलायुक्तो वा मैरेयः । (Arb., II.25) Both these examples refer only to the sweetening ingredients of maireya, viz. guḍa and madhu. Obviously according to Pāṇini's intention as implied in the sūtra, the word aṅgāni refers only to the sweetening ingredients and not to the aushadhi contents like meshaśringī, etc. It may be inferred with reason that the aushadhi contents of maireya remained constant, whereas the sweetening ingredients varied between guḍa, madhu, śarkarā, etc. The naming of maireya would thus depend not on the constant ingredients, but on the sweetening contents which varied. For example, the customer ordering his maireya drink from the master of the booth would not say meshaśringī-maireya or triphalā-maireya, but would express his desire for a variety in taste by ordering for guḍa-maireya, madhu-maireya, śarkarā-maireya, phāṇita-maireya, ikshurasa-maireya, etc.

The above varieties of sweetening ingredients (madhura-varga) mixed with the decoction of meshaśṛingī and other specified herbs, must have produced a correspondingly superior or inferior quality of drink. Charaka tells us that maireya was primarily a madhura wine, a drink of sweet taste. The choice of an inferior condiment like guda and phāṇita, or of a superior one like refined sugar made all the difference in the quality, taste and price of the maireya drink. The aristocratic customer in the tavern would order a superior grade of wine, and in the case of maireya this emphasis would fall naturally on the first part of the compound, i.e. on the word denoting the sweetening ingredient which therefore got an acute accent on it.

The Arthasāstra mentions guda as a mixture of maireya in the recipe quoted above. It agrees with the example gudamaireya of the Kāsikā. The other example madhu-maireya i.e. maireya prepared by mixing honey, lacks confirmation from the above statement in the Arthasāstra. The question arises as to whether we are on good authority for assuming that other sweetening ingredients besides guda were also added to maireya.

The answer to this is in the affirmative. In the chapter

relating to the duties of the Superintendent of the Royal Storehouse, Kautilya gives directions for the storage of liquids tasting astringent:

'Mixture made by combining any one of the substances, such as the juice of sugar-cane, jaggery, honey, raw granulated sugar, the essence of the fruits of jambū and jack tree,—with the decoction of meshaśringī (a kind of plant) and of long pepper should be stocked. To this the addition of the following is optional, viz. chirbhiṭa, cucumber, sugar-cane, mango fruit and the fruit of myrobalan. This mixture should be either one month or six months, or a year old. This constitutes the śukta-varga."

In this context Kautilya does not actually use the name maireya for the liquid to be stocked in the royal storehouse, but the recipe leaves no doubt that high class maireya is intended. The oshadhi contents are the same, viz. the docoction of meshaśringi and pippali (maricha is left out as of minor importance); in the optional group in place of tripbalā alone, we have greater variety in āmalaka, āmra-phala, urvāruka, iksbu-kānda, etc. In the enumeration of the sweet contents, in place of guda we have six varieties, of which madhu is also one. We can now understand the example madhumaireya given in the Kāšikā on Pāṇini, VI.2.70. Honey like guda was also an ingredient from which the particular variety of maireya derived its name. We may imagine that both guda-maireya and madhu-maireya were ancient illustrations to Pāṇini's rule. The plural number of the Pāṇinian word angani also stands justified by its reference to as many as seven varieties of sweetening ingredients mixed with maireya, viz. molasses (guda), honey (madhu), sugar (śarkarā), sugar-

१ इक्षुरस-गुड-मधु-फाणित-जाम्बव-पनसानामन्यतमो मेषश्रांगी-पिप्पली क्वायाभिषुतो मासिकः षाण्मासिकः सांवत्सरिको वा चिद्धिटोर्वाक्केक्षुकाञ्चफलामलकावसुतः शुद्धो वा शुक्तवगैः। (Arth, Text, II.15, p. 94).

cane juice (ikshu-rasa), inspissated juice (phăṇita), sugar of jack-fruit (panasa) and of rose-apple (jāmbava).

KĀPIŚĀYANA—Kāpiśāyana is referred to in sūlra IV.2.29: Kāpiśyāh shphak.

The grape exported from Kāpišī was known as Kāpišāyanī drākshā and its wine Kāpišāyanam madhu. Kāpišī¹ is even today the home of the grape. In ancient days an excellent quality of raisin wine was manufactured at Kāpišī and widely exported.² Kauṭilya supplies the clue to the name Kāpišāyana: 'The juice of grapes is termed madhu. Its own native place is the commentary on such of its various forms as Kāpišāyana and Hārabūraka.' (Arth. Trans. p. 145; Text. II.25). Obviously there were two varieties of the grape wine, the Kāpišāyana produced in the region round Kāpišī in north Afghanistan, and Hārabūraka in the south in the valley of the Harahvaiti or Arghandāb.³ The black raisins are still called barabūrā, and it is possible that the Kāpišāyana or northern variety of wine was made from green and the Hārabūraka or Kandhār wine from black grapes.

Kautilya's sentence, tasya svadeśo vyākhyānam Kāpišāyanam, supplies the needed commentary on Pāṇini's Kāpišāyana which must have been the name of the reputed wines from that region. That Kāpišī was an emporium for this class of drinks is also proved by the recent archaeological discoveries at this site of numerous glass flasks, fish-shaped wine jars and drinking cups which were used in the wine trade many

<sup>&</sup>lt;sup>1</sup> Kāpiši is ancient Begram on the confluence of the Ghorband and Panjshir rivers. An inscription in Kharoshthi characters recently found there settles the ancient site of the place. (Dr. Sten Konow, Kharoshthi Ins. on a Begram Bas-relief, Ep. Ind., XXII, pp. 1-11).

<sup>&</sup>lt;sup>2</sup> Bindusara sent for raisin wines from king Antiochos in the third

century B.C.

<sup>2</sup> Harbvaiti (Avestan), Harahnvati (O. Persian)=Skt. Sarasvatī; also called Haraquaiti (cf. CH.I. p. 326). It is the modern Arghandāb. (Vedic Index, II.434, footnote to Sarasvatī).

centuries after Păņini. (Cf. J. Hackin, Recherches Archéologiques à Begram, 1939, pp. 9-10, plates XVII-XIX).

KASHĀYAS—Pāṇini also refers to names of kashāyas, or decoctions (VI.2.10, Adhvaryu-kashāyayor jātau) of which the Kāśikā gives several examples. The dauvārika-kashāya, must have been an intoxicating drink of mild effect specially prepared for the dauvārika or doorkeeper (Pāṇini, VII.3.4; also Arth. Text. V.3), whose duties required him to indulge only in the mildest kinds of drinks.

Besides the above names, the Gaṇa-pāṭha of V.4.3 (supported both by the Kāŝikā and Chāndra Vṛitti) includes kālikā and avadātikā as names of special wines. Kālikā must be the same as kālikā surā in Kauṭilya (Arth. Text. II.25) and avadātikā might be only another name for śvetasurā of the Arthaśāstra (p. 121), also called prasannā (cf. Kāŝikā on V.4.14). Kātyāyana refers to śīdhu in a vārttika on II.2.8.

DISTILLATION—In the distillery (āsutī, V.2.112), the ingredients were first prepared into a ferment (kinva); and when their fermentation was complete, they were termed āsāvya (III.1.126), literally 'that of which the distillation has become imminent' (āvaśyaka). The sediment or refuge (kalka) left after distillation was termed vinīya (III.1.117), a technical word in the vintner's vocabulary, literally 'which is fit for removal.' According to Kauṭilya, women and children could be employed for removing the surā-kinva, or fermented dregs (Arth. Text, II.25, p. 121).

Another expression originating in the vocabulary of the drinking booth was kane-hatya (pibati) regularised in sūtra I.4.66, which corresponds to the English idiom 'drinking or draining to the lees.'

#### CH. III, SECTION 7. HEALTH AND DISEASE

There is evidence of early investigation and nomenclature in the Vedic period of a number of important diseases and also of the identification of many useful herbs which pharmaceutical research in that age employed to fight disease. The evolution is further suggested by the development of specialised studies, as for example, Toxicology (Visha-vidyā) which is enumerated in one place in the list of special sciences or vidyās (Vedic Index, II.312).

These studies were cultivated at important educational centres and attracted brilliant pupils gifted with practical mental bias who must have found in them openings for a useful career in later life. Takshasilā was one such reputed centre at which Jīvaka, the royal physician of king Bimbisāra received his education.

Pāṇini brought up in the traditions of Takshaśilā uses several words for disease, such as gada (VI.3.70), upatāpa (VII.3.61) and sparśa (III.3.16), the last probably referring to contagious diseases. A medical doctor is called agadainkāra (VI.3.70). The herbs were known as oshadhi and the medicines as aushadha (V.4.37, Oshadher-ajātau). Since an aushadha was a compound of several ingredients to suit the needs of each case Pāṇini takes the view that it did not form a genus or class like the herbs.

A special suffix tas was used to indicate the disease to be cured (Rogāchāpanayane, V.4.49), in such phrases as pravāhikātaḥ, kāsataḥ, chhardikātaḥ kuru 'please cure me of (1) diarrhoea, (2) cough, and (3) vomitting'.

HUMOURS OF THE BODY. Kātyāyana commenting on Pāṇini's sūtra Tasya nimittain sainyogot pātau (V.1.38), mentions the three humours of the body for the first time

together, viz. (1) vāta (wind), (2) pitta (bile), (3) šleshma (phlegm). On this basis Eggeling says, there was "some kind of humoral pathology prevalent among the Indian physicians several centuries before our era." (Ency. Br. Vol. 19, p. 970b, 14th edition).

We have separate reference to vāta in sūtra V.2.129 in connection with a patient (vātakin) suffering from wind. Pitta occurs in the Sidhmādi group (V.2.97) and šleshman forms part of the Pāmādi-gaņa (V.2.100).

DISEASES (ROGA, UPATĀPA) — Pāṇini frames rules for naming diseases after, e.g. (1) time (kāla); e.g. dvitīyaka, chaturthaka, fevers appearing after two or four days; (2) cause or effect (prayojana); e.g. fevers with shivering (śītaka) or heat (ushṇaka), or fevers produced by poisons as vishpushpa, and kāsapushpa (Kāšikā).

Names of diseases (rog-ākbyā) were formed according to a regular pattern by adding the ika suffix (sūtra III.3.108), which according to the commentators regularised such forms as prachchhardikā (vomitting), pravāhikā (diarrhoea), vicharchikā (scabs), etc. The rule points to the tendency in medical science for names of ailments to follow a uniform derivative pattern, similar to that in modern pathology. Pravāhikā diarrhoea and vicharchikā (scabs) are referred to in a sūtra as atisāra and pāman (V.2.129).

In medical language patients are described in terms of the disease from which they suffer. Pāṇini notes a general provision to derive the name of the patient after the name of the disease (V.2.128), for example kushṭhī from kushṭha, one afflicted with leprosy, (VIII.3.97), etc. Similarly he mentions ariasa (one suffering from haemorrhoids, V.2.127), vātakī (a sufferer from wind troubles), atisārakī (V.2.129, one afflicted with dysentry). One suffering from the debilitating effects of a disease was called glāsnu, 'convalescent' (III.2.139). Kātyāyana notes the word āmayāvī (vārttika on V.2.122) for an ailing patient.

AUTUMNAL DISEASES—Seasonal outbreaks of epidemics were known, as shown in sūtra IV.3.13, referring to Śāradika roga, 'autumnal diseases.' These diseases, mostly fevers, coming after the rainy season, are still known.

LIST OF DISEASES—The following diseases are noted in the sūtras.

- (1) Atisāra (V.2.129), from which the derivative word was atisārakī.
  - (2) Arśas (V.2.127), piles.
- (3) Āsrāva (III.1.141), discharge. It is a disease mentioned in the Atharvaveda, the precise nature of which is uncertain. Sāyaṇa translated it as painful urination (mūtr-āti-sāra, Atharva, I.2.4) Lanmann takes it as diabetes and Bloomfiled as diarrhoea (Vedic Index, I.74).
- (4) Kushṭha (VIII.3.97), leprosy. According to Charaka sidhma, pāmā and vicharchikā are reckoned amongst eighteen kinds of kushṭha.
- (5) Kshetriyach. It is mentioned several times in the Atharvaveda, which scholars take to be the name of a special disease. Indian commentators understand it in the sense of hereditary disease (Vedic Index, I.211). Pāṇini throws light on its meaning in the following sūtra:

## Kshetriyach para-kshetre chikitsyah, V.2.92.

'Kshetriya is that (disease) which is curable in another body', i.e. a foul disease which is incurable in this life.

- (6) Nyubja (VII.3.61), hump-backedness due to disease.
- (7) Pāman (V.2.100), a skin disease. It occurs in the Atharvaveda as the name of a skin disease (V.22.12). According to Keith the derivative adjective, Pāmana 'suffering from skin disease' is found in the later Sambitās and the Brāhmanas (Vedic Index, I.517).
  - (8) Vikshāva (III.3.25), cough.
- (9) Samjvara (III.2.142), fever, probably consumptive in nature. The sufferer was called samjvarī.

- (10) Sidhma (V.2.97), a kind of leprosy, the sufferer being known as sidhmala.
- (11) Sparsa (III.3.16). According to Katyayana's varttika the word denoted an ailment, probably contracted by touch or infection.
- (12) Hṛid-roga (VI.3.51), heart-disease. The word occurs also in the Rigveda. In the medical Sambitās the word probably denoted angina pectoris (Vedic Index, II.507).

BODY (ŚARĨRA)—Anatomy of the body was a subject which had attracted the attention of the Indians even in the Vedic times (Vedic Index, II.358). The popularity of the subject is proved by the fact that even a grammatical treatise like the Ashṭādhyāyī contains a comprehensive list of terms for the various parts of the body. Body (śarīra) consists of two kinds of limbs (svānga), viz. dhruva (vital, VI.2.177) and adhruva (non-vital, III.4.54). The former is defined by the Kāśikā to include those limbs the loss of which results in death; the latter signified parts or limbs injury to which did not cause death. Pāṇini regards the costal bones (parśu, VI.2.177) as dhruva or an essential limb.

The following bodily parts (svāingas) are mentioned by Pānini:

Fingers (ainguli), foot (pāda), forepart of the foot (prapāda, V.2.8), knee-caps (ashṭhīvat, VIII.2.12), legs janghā), knee-joints (jānu, V.2.129) thighs (uru, ūrvash-thīva, V.4.77), loins (sakthi, V.4.113), hips (sphiga, VI.2.187), belly (udara), navel (nābhi), womb (kukshi), arms (bāhu), chest (uras), ribs (paršu, VI.2.177), breasts (stana), collar-bone (ainsa), neck (grīvā), nape (manyā, III.3.99, cf. Vedic Index, II.133), ears (karņa), nose (nāsikā), eyes and eyebrows (akshi-bhruva, V.4.77), mouth (mukha, VI.2.167), lips (oshṭha), teeth (danta, IV.1.55), tongue (jihvā), forehead (lalāṭa), head (mūrdhā, mastaka, šīrsha), bone (asthi), sinews and arteries (nāḍī, tantrī, V.4.159), heart (bṛidaya, hṛit, VI.3.50), lever (yakṛit, VI.1.163), hair (keśa, loma),

nails (nakha derived as na plus kha, VI.3.74), skin (tvach.), flesh (māmsa), vital parts (arush, V.4.51), bladder (vasti, IV. 3.56).

The list includes some words specially noticeable, as manyā, tantrī, arush and vasti. According to Amarakosha the vein in the back of the neck was called manyā.

MAHA-HAILIHILA-Hailihila and maha-hailihila are words of unknown meaning and origin, mentioned by Pānini as special names of some article (VI.3.38). The word is not explained in any Sanskrit dictionary, nor is there any instance of its being used in literature. It appears that bailibila was a Semitic word appearing in a sanskritised form, as the name of poison which was imported from the Arabic balābila means deadly poison In Hebrew halūl, deadly poison). Steingass derives without reason the Arabic word from Skt. halābala (F. Steingass, Persian-English Dictionary, p. 1506). The Skt. word itself is exotic as shown by its variant spellings, e.g. bālābala, balābala, hālahala, hālahāla, hāhala, hāhāla (Monier-Williams, A Sanskrit-English Dictionary, 1899 revised edition, p. 1293). Pāṇini's hailibila seems to come nearest to the original Semitic form of the word, which may have been Armaic, the international language of trade and commerce in the Achaemenian world from Syria to Gandhara. Panini refers to poisons in genesal called visha and to the third degree methods of liquidating particular persons marked out as vishya by the administering of poison.

#### CH. III, SECTION 8. DRESS AND ORNAMENTS

WORDS FOR CLOTHING—Besides the usual vastra and vasana denoting clothing in older literature Pāṇini mentions three new post-Vedic words, viz. chīra (VI.2.127), chela (III.4.33) and chīvara (III.1.20). In the sūtra Chele knopeh (III.4.33), chela denotes a garment worn on the body. Chīvara is frequently used in Buddhist books for a monk's robe. It is conspicuous by absence in the Brāhmaṇa and Āraṇyaka literature. Its Buddhist association is strengthened by its illustration which occurs both in the Chāndra-vṛitti and the Kāśikā, saṃchīvarayate bhikshuḥ, the monk dons the chīvara or 'takes the holy robes.' We do not find the word applied to the garments of laymen, a householder or a Brahmachārin.

The word āchchhādana denoted both a garment as prāvāra (III.3.54) and brihatikā (V.4.6), and also cloth (VI. 2.170). It is more frequently used in the Ashtādhyāyī than any other word for cloth. Its later affinities are apparent from the fact that the word is not found in the Brāhmaṇas, but occurs several times in the Dharmasūtras (Vasishtha, XVII.62; XVIII.33, scāsāchchhādana) and the Arthasāstra in the sense of clothing (Arth. Text, I.11, p. 18).

KINDS OF FABRICS-Various classes of fabrics are mentioned:

- (1) kauseya (VI.3.42), silken cloth. According to Kātyāyana kauseya is so called because it is produced from the cocoon, and though the silk-worm is also a similar product, the word applies only to the silken cloth.
- (2) Linen cloth (auma or aumaka, IV.3.150), made from the yarn of flax (umā), and hemp (bbangā) plants.

- (3) Woollen garments (aurņa or aurņaka) made from wool (ūrņā, IV.3.158).
- (4) Cotton (kārpāsa āchchhādana, a counter-example to IV.3.143). The word karpāsī occurs not in a sūtra, but in the Gaṇa-pāṭha Bilvādi (IV.3.136), but its reading there must be authentic, as it is the only fabric-denoting word in the Bilvādi group, and without it half of Pāṇini's rule IV.3.143 (abhakshy-āchchhādanayoḥ) would become redundant. In the chapter, IV.3.136-142, to which the rule IV.3.143 applies, karpāsī is the only word denoting cloth-making material.¹ The word tūla also occurs in Pāṇini (III.1.25, III.3.64), in a compound like ishīkā-tūla.

DRESS-The dress of the times is indicated in the sūtra Antaram bahiryogopasamvyanayoh, I.1.36. We learn from this rule that antara in Panini's time was used in two senses, viz. exterior (bahiryoga) and dress (upasamvyāna). According to Kātyāyana upasamvyāna denoted one of a pair of śātakas. Since there were two śātakas one serving as uttarīya and the other as antarīya, upasamvyāna denoted the one which served as antariya, viz. that which was worn, and not that which was used as a wrapper or scarf to be thrown over the shoulders. The Kāśikā further explains that upasamvyāna was a kind of paridbānī ya 'fit for wearing,' and not a bravaraniya 'covering.' In the most early examples of Indian sculpture as shown in the Parkham Yaksha statue (Dr. Coomaraswamy, H.I.I.A., Pl. III), the Didargan, Jakshi from Patna, made of polished Chunar stone and belonging to the Maurya period (ibid., Pl. V), and the numerous Yaksha and Yakshī figures of Sanchi and Bharhut, the sole dress of both male and female figures consists practically of a pair of śātakās (śātakayugam). Both the upasamvyāna (antara sātaka, antarīya) and the prāvaranīya (upper scarf) were

<sup>&</sup>lt;sup>1</sup> The genuineness of the Bilvādi group is also proved by Kātyāyana examining in a vārttika the reading of gavedbukā which is ninth in position (II.323).

arranged gracefully in an endless variety of ways. The Greeks in the fourth century B.C. were struck with the extreme simplicity and elegance of Indian dress, consisting then as in the time of Pāṇini, of a pair of śātakas. Arrian writes: 'The dress worn by the Indians is made of cotton, as Nearchos tells us. They wear an undergarment of cotton which reaches below the knee half-way down to the ankles, and also an upper garment which they throw partly over their shoulders, and partly twist in folds round their head.' (Arrian. Ind. Frag. XVI). The Ashtadhayi enables us to know that the undergarment reached down to the forepart of the foot, and was therefore called aprapadina (V.2.8). An invariable feature of wearing the antariya or dboti as seen on ancient sculptures depicting male and female figures is the tying of the girdle round the waist. The arrangement of the girdle is clearly visible on the Parkham statue, the Besnagar Yakshi and the Patna Yakshas, where it can be distinguished from the upper scarf and the lower dboti. Pānini refers to a girdle as nīvi, the region of the belt being called upanīvi (IV.3.40).

On sūlra, V.1.21 Patanjali cites an illustration from which we learn that the price of one hundred śāṭakas or dhotis was one hundred (Śatena krītam śatyam śāṭaka-śatam, 11.346). It will be shown in the Section on coins that when the number occurs without specifying the name of the coin, a silver kār-shāpana was usually meant. We may therefore say that in the time of Patanjali (2nd century B.C.) the selling price of an average cotton sārī was one silver kārshāpana.

In the Sthūlādi-gaņa (V.4.3) there is a reference to the gomūtrikā cloth, which appears to have been so called from the gomūtrikā design woven into its texture at one end. The gomūtrikā pattern was known in the fourth century B.C. as mentioned in the Arthasāstra in connection with the formation of battle-arrays (Arth. Text, X.6). We may note in this connection that the paṭalī or front folds of the dhoti on the

Yaksha statues aforesaid are arranged zig-zag in the form of the gomūtrikā motif.

BLANKETS (KAMBALA)-Several kinds of blankets and woollen wrappers of different kinds were in use. Blankets produced in a standard size as marketable goods were called panya-kambala (V.2.42). Their size and weight were determined according to the measure of wool used. Such measure was called kambalya, equal to one hundred palas in weight, roughly five seers. The kambalya measure is derived by Pānini as a samijnā word (Kambalāchcha samijnāyām, V.1.3), pointing to its definite meaning. The kambalya seems to have been a measure of value and medium of exchange for some transactions in the barter economy of those days. Pānini mentions the formation kambalyā in sūtra IV.1.22, illustrated by the Kāšikā as dvi-kambalyā, tri-kambalyā, i.e. 'purchased for the price of 2 or 3 kambalya measures of wool' which would refer to a goat or sheep purchased for 2 or 3 kambalya measures of wool. PRAVARA-Prāvāra (also pravāra) as a garment is referred to in the sūtra Vrinoter āchchhādane (III.3.54). Kautilya names prāvāraka as a blanket made of the wool of wild animals (mṛiga-roma, p. 80). In the Mahābhārata prāvāra is described as a class of blankets for protection against cold (Vanaparva; 3.51). It seems that pravara was a wrapper made of finer quality of wool and lighter in weight than the banya-kambala. BRIHATIKA-It is referred to in sūtra Brihatyā āchchhādane, V.4.6. The upper garment which was thrown on shoulders covering either one or both of them and falling down to the waist or knees seems to have been the bribatika dress. The Amarakosha understands it as a kind of prāvāra, a big allcovering mantle. As remarked by the Greeks about the dress of the Indians: "They have a tunic of tree-linen down to the middle of their shins" (C.H.I., p. 412). This long tunic may have been the bribatikā conforming to a real etymology of that word. Patañjali mentions bribatikā as a current dress (1.2.69). It seems to have been a fine wrapper 24' by 12' in size, mentioned as bābitikā in the Majjbima Nikāya (Sutta 88).

A rich kind of wrapper known as rānkava is referred to in ancient literature along with woollen fabrics. Pāṇini mentions ranku in sūtra IV.2.100, from which we get rānkava and rānkavāyana. The Kāsikā explains rānkava as a blanket.

We may also note the names of two other kinds of blankets known to Kātyāyana and Patañjali. In a vārttika on sūtra VII.3.45, (Varṇakā tāntave) Kātyāyana mentions varṇakā as a woven fabric, which Kauṭilya describes under the masculine form varṇaka as a kind of woollen blanket (Arth. II.11). Patañjali refers independently to kutaḥa, a Nepalese blanket or thulma (II.1.69; I.406).

ORNAMENTS AND TOILET—Pāṇini refers to cultured citizens (pravīṇa nāgarakas, IV.2.128), and also to the arts of personal decoration (subhagankaraṇa, III.2.56). Decoration was applied to the different parts of the body (Svāngebbyaḥ prasite, V.2.66), such as keśa, which were dressed in an artistic manner by the dandy called keśaka. There are references to ornaments (alamkāra, IV.3.64), elegant drapery (āchchhādana, V.4.6), stylistic coiffure (keśavesha, IV.1.42) and to special words indicative of the beauty of the female form, e.g. vāmoru, samhitoru, śaphoru (IV.1.70).

In a group of phrases as purusha-vyāghra, purusha-simha (II.1.56, Upamitam vyāghrādibhih sāmānyāprayoge) and hastighna (III.2.54), Pāṇini refers to the ideal of physical valour (šakti) for men.

He also mentions some epithets indicative of social-honour, e.g. sat, mahat, parama, uttama, utkrishta (II.1.61), vṛindārka, nāga, kuñjara, pūjyamāna (II.1.62), etc.

Whereas women enjoyed themselves with various garden sports as śālabhañjikā implied in the sūtra Prāchām krīḍāyām (V.2.74), the male members skilled in the use of arms parti-

<sup>1</sup> Sabhā Parva, 47.22, anrņais cha rānkavam.

cipated in jousts organised for the sake of pleasure (praharaṇakrīḍā, IV.2.57). Music, both vocal (gāyana, III.1.147) and instrumental (vādaka), practised on the lute and other percussion instruments, also formed part of the usual pastime of a cultured society.

Of ornaments (alankāras) Pānini refers to anguliya, finger-rings (IV.3.62), karnikā, ear-ring1 (IV.3.65), lalātikā, ornaments of the forehead (IV.3.65) and graiveyaka, torque round the neck (IV.2.96). If we look to the earliest known examples of Indian art we find these three ornaments conspicuously depicted there. The karnikā is represented as the heavy ear-rings worn in cloven ears of men and women; the graiveyaka" as the torque, worn in addition to the flat triangular necklace on such statues as the Parkham Yaksha; and the lalatika as the round pendant on the forehead of the earliest female figures as the Yakshī from Didargani, Patna (Bachhoffer, Early Indian Sculpture, Pl.9) and Sudarśanā (Pl.19), Chulakokā (Pl.20) and Sirimā devatās (Pl.21) from Bharhut. These works of art are no doubt removed in time from Pāṇini, but they represent the earliest specimens of classical Indian art and show an older tradition. The Jātakas also mention ear-rings, frontlet pieces and torques round the neck (giveyya, Jat. VI. 590).

Pāṇini also mentions kumbā (III.3.105) which according to the Vedic Index denoted a female adornment connected with the dressing of the hair (Vedic Index, I,163). In one place he refers to a special style of female coiffure (keśa-veśa) known as kabarī (IV.1.42). The word may have originated from the variegated appearance of the braid of hair interwoven with a garland of flowers.

Among other requisites of personal decoration (bhūshaṇa,

<sup>&</sup>lt;sup>1</sup> Nearchus, Frags. 9 and 10; "And the Indians wear ear-rings of ivory." C.H.I., p. 412)

<sup>&</sup>lt;sup>2</sup> For graiveyakas see also J.U.P.H.S., May, 1933, p. 97, Pre-Kushana Art of Mathura, by V. S. Agrawala.

I.4.64, VI.1.133; alankāra, IV.3.65, etc.) and toilet (subhagam-karana, III.2.56), we find reference to the following:

- Darśana (V.2.6), mirror (ādarśādi, Kāśikā) which was of two kinds, (1) yathāmukhīna (flat) and (2) sammukhīna (convex) in which only the frontal view gave correct perspective, and which was probably made of polished metal.
- 2. Añjana, not referred to directly, but mention is made of the Trikakut mountain (V.4.147) from which a kind of valuable salve called Traikakuda añjana was obtained (Cf. Atharva, IV.9.9; Vedic Index, I.329). It may be identified with the Sulaiman mountains which is the home of a salve sold all over Sind and Panjab. The Mahābhārata refers to fair-complexioned Panjabi women painting their eyes with the añjana from the Trikakut mountain (Karṇaparva, 44.18). Another kind of salve, Yāmuna añjana was obtained in the region of the Yamunā, (Dehradun Dt.) which was known to Pāṇini as Kalakuṭa ('the Black Hill', IV.1.173).
- 3. Mālā (VI.3.65), garland. One who adorned his person with garlands was called mālabhārī (VI.3.65; fem. mālabhāriņī). Patanjali illustrates this sūtra by the form utapalamāla-bhāriņī i.e. the girl adorned with lotus garlands (I.1.72; I.187). Pāṇini refers to sragvī, a garland-wearer, used as the special epithet of a snātaka, who beautified himself with flower garlands after completing the period of studentship during which time the use of flowers was forbidden.
- 4. Gandha (perfumes). Pāṇini mentions several kinds of perfumes, as (1) kisara (IV.4.53), (2) śalālu (IV.4.54) in the sūtras, and others like narada, tagar, guggulu (bdellium) and uśīra (Andropogon Muricatus), in the Kisarādi-gaṇa. From the way he mentions these perfumes it appears that there were special shopkeepers who traded in these articles (Tadasya paṇyam) and who were named after them, e.g. a woman selling śalālu (an unidentified fragrant substance) was called śālāluki and śalāluki. Spikenard (nalada) was an old

Indian perfume produced in the regions of the upper Indus and in Indo-Scythia and forwarded through Ujjain to Bharukach-cha and thence to Egypt. 'Pliny describes the nard with its spica, mentioning also that both the leaves and the spica are of high value, and that the odour is the prime in all unguents, the price being 100 denarii for a pound.' (McCrindle, Peri-plus, p. 25).

- 5. Danda (V.1.110). Pāṇini refers to the staff called āshāḍha (pālāša-daṇḍa) which was used in the initiation ceremony (upanayana).
- 6. Asi (IV.296), sword, also called kanksheyaka from its being kept in a sheath.
- 7. Upānah (V.1.14), shoes, made of leather, manufactured according to the size of the foot (anupadīnā, V.29). The Baudh. Śr. Sūtra mentions shoes made of tiger's skin (vaiyāghryau upānahau charmapakshau, XVIII.16, p. 361). Pāṇini also knew of the use of vaiyāghra leather (IV.2.12) for upholstering purposes.

The Brahmajāla Sutta contains a stock list of dress and toileting processes comprising twenty items. (G. P. Majumdar, Toilet, Ind. Culture, Vol. I, p. 651). This list agrees closely with the one laid down in Susruta (ibid. p. 653). Of those items Pāṇini refers to mirror, collyrium, garlands, perfumes, shoes and staff. In the Yājakādi group (which occurs twice in the Ashtādhyāyī, II.2.9 and VI.2.151), Pāṇini mentions snāpaka (barber), utsādaka (one who anoints), udvartaka (one who rubs the body with emollient unguents) and parishechaka (one who sprinkles); and again in the Mahishyadi-gana (IV.4.48) anule pikā (a female for applying sandal paste after bath), pralepikā (a female to apply unguents before bath) and vilepikā (a female to apply scented oils, etc.). The Arthaśāstra also mentions these personal attendants in the service of the king. (Cf. also the king's toilet in the Kalpasūtra which mentions them, S.B.E., Vol. XXII, p. 241 ff.).

#### CH. III, SECTION 9. DWELLINGS

Pāṇini acquaints us with the principal architectural patterns of buildings found in a big city, e.g. rāja-sabhā (the king's council-hall, II.4.23), geha, griba (houses, III.1.144), nivāsa and nikāyya (residential buildings or quarters, III.1.129), chhātri-śālā (hostels for women, VI.2.86), words ending in agāra, like koshṭbāgāra (royal store-houses, IV.4.70), nishadyā (rest-houses, III.3.99), dvāra (city-gates, IV.3.86), parikhā (moats, V.1.17), kapāṭa (door leaves, III.2.54) and parigha (bolts, VIII.2.22).

ŚĀLĀ-Śālā was used for a variety of buildings, e.g. sabbā (council-hall II.4.24, Aśālā cha); chhātri-śālā (female hostel, VI.2.86); gośālā and kharaśālā (stables for cows and asses, IV. 3.35), the last one being also found in the Atharvaveda and Brāhmanas (Vedic Index, II.376). Śālā was also used for a granary room for storing corn with an opening called śālā-bila (VI.2.102). It was a Vedic word (Vedic Index, II.376). HOUSES-The Vedic word for home was griba. Panini also uses the term griba (III.1.144) which the Kāšikā explains as vesma or homestead, or as the women in residence there (tātsthyād-dārāścha), implying that the women constituted principally the household. Three other terms were also used. viz. geha (III.1.144), agāra (III.3.79) and kshaya (VI.1.201; cf. Sabhāparva, 33.16, ajāyata Yadukshaye, Krishna born in the house of Yadu). Agara occurs once in the Kaushitaki Ubanishad (Vedic Index, 1.7).

Pāṇini refers to officers (niyukta), in charge of buildings ending in agāra (IV.4.69-70), e.g. bhāṇḍāgārika, devāgārika, koshṭhāgārika (Kāśikā). Agāra indicated a larger building with several parts, one of which (agār-aika-deśa) was called praghaṇa or praghāṇa (III.3.79), explained by the Kāśikā as

the rooms in the outer gateway of a building (bāhya-dvāra-prakoshtha). (Cf. Pali paghana, a covered terrace before a house, Vin. II.153; paghanain nāma yain nikkhamantā cha pavisantā cha pādehi hananti, Buddhaghosha). In the Udaya Jātaka there is a reference to kotthaka which the commentary translates as dvāra-kotthaka (Jāt. Vol. IV. 106). Dr. Coomaraswamy understands dvāra-kotthaka specifically as gatehouses, which formed part of the gateways in the wall of a city and of which several examples are found in ancient Indian art (Early Indian Architecture, 'Cities and City-Gates,' p. 209, Eastern Art Annual, 1930, Vol. 11; Skt. alinda).

NISHADYĀ—In sūtra, III.3.99 Pāṇini gives nishadyā as a specific word (samjñā) meaning a rest-house. The nimsi (d) yās (resting places) are referred to by Aśoka (Pillar Edict VII). The Nāgarjunī Hill Caves were built for providing shelter to monks during rains (vāsa-nisidiyāya=varshā-nishadyāyai). NIKĀYYA AND NIKĀYA—These are synonymous of nivāsa, a dwelling place (III.1.129; III.3.341), and are in this sense peculiarly Pāṇinian words. It is not certain whether they were used to denote only the residence of monks. In the Manu Smrīti we find the word deva-nikāya (I.36), taken by the commentators as deva-nivāsa-sthāna. Nikāya occurs once in the Yajurveda, but as the name of a chhanda denoting Vāyu (Śatapatha, VIII.5.2.5, commenting on Yaj., XV.5). The Arthasāstra also uses nikāya once, but in quite a different sense, viz. sangha (Text. II.4, p. 55).

EKAŚĀLIKA—The word eka-śālika, or its optional form aikaśālika, was of some practical importance. Pāṇini derives it as eka-śālā iva, 'that which is like one (man's) building' (V.3.109). It did not mean the owner of a single house, but it denoted a dwelling-place, which in respect of its use was reserved as one man's building, i.e. not intended for public use. The Tinduka-vana of queen Mallikā, wife of king Prasenjit, in the vicinity of Śrāvastī (Dīgha Nikāya, I. p. 278) was formerly eka-sālaka used as her own pleasance or for her

guests. Such a residence was called rājāgāraka (Brahmajāla Sutta). Subsequently this park-house was thrown open to the Buddhist community (bahū sālā katā; Sumangala-Vilāsinī, II. p. 365). It was a matter of some consequence in the social life of that period whether a park-residence of some rich man was of the nature of ekaśālika, i.e. reserved for personal use, or was thrown open for public use. We know from the story of Anāthapindika how he converted the garden of Prince Jeta which used to be eka-śālika (i.e. reserved for his own use) into a public residence for the use of the entire Buddhist Samgha.

MATERIALS—Pāṇini refers to bricks among building materials in the phrase ishṭaka-chita, denoting something constructed with bricks (VI.3.65). The Pāli literature also mentions iṭṭhakā-vaḍḍhaki or brick-layers. (Dr. Coomaraswamy, City and City-Gates, p. 211; Jāt. VI. p. 333).

The roof of a house is called chhadis, probably denoting the thatched covering known as chhappar. The word chhādisheya refers to the material with which the chhadis was made (V.1.13). The actual doorway (dvāra) opened or closed with a pair of leaves called kapāṭa. Reference is made to daring burglars (kapāṭaghna chaura) battering against the leaves of a door-way to secure entrance (III.2.54). The Mahākanḥa Jāṭaka refers to battering against the palace-door (kavāṭe ṭhapetvā, IV.182). The closed door panels were secured from inside by a bar drawn across called parigha or paligha (VIII.2.22), which meant an iron bolt (Vedic Index, I.494).

Besides the residential and public buildings, there were market-places (āpaṇa, III.3.119) where commercial commodities (paṇya) were stocked and saleable goods (krayya, VI.1.82) were displayed.

Păṇini also refers to the old Vedic god Vāstoshpati (IV.2.32), the presiding deity of vāstu or homestead. Two older words, kshaya, 'abode' (VI.1.201) and āvasatha (V.4.23), are also mentioned. The precise sense of āvasatha appears to

be a place for the reception of guests, especially Brāhmaṇas and others on the occasion of feasts and sacrifices (Vedic Index, I.66). According to Pāṇini: 'One who lives in an āvasatha is called āvasathika' (IV.4.74). The religious guest-house was identical with that part of a householder's dwelling in which the household fire (āvasathya agni) was established.

<sup>1</sup> We are indebted to Patañjali for preserving two important architectural terms, viz., āmalakî and valabhī (Bhāshya, VI.2.82; III.132) denoting the pinnancle and the cornice-mouldings respectively, which figure so prominently in the earliest representations of buildings in the sculpture of Bharhut and Sanchi.

## CH. III, SECTION 10. TOWN-PLANNING

Pāṇini refers to some important towns of his time. e.g. Kāpiśī, Takshaśilā, Śākala, Hāstinapura, Śāmkāśya, and Kāśi. The gaṇas add other names. The existence of these cities shows progress in the art of town-planning (nagara-māpana) and architecture (vāstuvidyā). References to vathuvijjāchariya and pāsāda-māpana are known in the Jātakas (Suruchi Jāt. IV.323).

The most important parts of a city were its moat (parikhā), rampart (prākāra) and gates (dvāra), which served as the main defences. Sulras V.1.17-18 envisage regular town-planning. For example, Parikhāyā dhañ, speaks of 'the space earmarked for a moat as pārikbeyī (bbūmi).' The previous sūtra, Tadasya tad-asmin syād-iti, V.1.16, presupposes some sort of planning preceding the actual construction work. The marking out of the site of the moat, the rampart and the palace formed the preliminary part of such planning. The Vatthuvijjāchariyas or expert architects were requisitioned for testing sites (Jat. I.297; IV.323), for the actual planning of cities (cf. nagaranis Vedebena sumābitam, Mahāummaga Jāt, VI.448). The Arthasāstra mentions the construction of ditches (parikhā) as the first item in the construction of forts (durga-vidhāna). We read in the Mahabharata that the site of Indraprastha was mapped out (nagaram māpayāmāsuh) in the presence of Dvaipāyana Vyāsa and others and that work commenced with the digging of a series of moats (parikhābhih), followed by the building of a high rampart (prākāra), numerous gateways (dvāraib) and towers (saudhaib) (Adiparva., 209.29-32). Why the moat was built first can be understood from the fact that the earth so obtained was utilised for raising the mudrampart (pāmsu-prākāra), or for moulding bricks for the city-wall (prākārīyā ishṭakā), or as Kauṭilya says, for ramming in the hollow masonry work (pāmsu-višeshena vāstu-chhidrani vā pūrayet, Arth. Text, II.3, p. 52).

The Arthasastra ordains the digging of three moats round the fort, having an intermediate space of one danda (6 ft.) between each other and being fourteen dandas (84 ft.), twelve dandas (72 ft.), and ten dandas (60 ft.) respectively in width (Arth. II.23). Thus a total width of 38 dandas (218 ft.) represented the pārikheyī land round the fort. We are indebted to the commentary on the Udaya Jātaka (IV.106) for names of the three moats, viz. udaka, kaddama and sukkha, a water moat, a mud moat, and a dry moat. These may be taken to have followed the width given in Kautilya. We have discussed in another chapter Pānini's purusha measure (V.2.38) which according to the Arthasastra was equal to 5 1/3 feet (Arth. Text, II.20, p. 106). Kautilya says that depth was measured in terms of this length called khāta-paurusha. The examples dvi-purushī and tri-purushī in the Kāšikā on sūtra V.2,38 (Purusha-bastibhyām an cha) refer to the depth of ditches or moats.

PRĀKĀRA AND DEVAPATHA—There is no mention of prākāra in the sūtras. Kātyāyana mentions prāsāda and prākāra in a vārttika on sūtra, VI.3.122, and the trend of his discussion shows that the words were implied in Pāṇini's rule. The stock illustrations on V.1.16 (Tadasya tadasmin syādīti) include prākārīya deŝa (the site for a rampart) and prākārīya ishṭakā (bricks for the city-wall), the latter agreeing with the direction of Kauṭilya that the ramparts should be made of bricks.

There is, however, one word in the Ashtādhyāyī, which gives a definite clue to Pāṇini's acquaintance with the technical details of the building of ramparts and parapets. He mentions devapatha at the head of the gana Devapathādi, (V.3.100), which again can be explained only in the light of Kautilya. This corroborative testimony from the Arthasāstra is rather

singular since no other work throws light on the meaning of the Pāṇinian word. According to Pāṇini the 'passage' which resembles a 'celestial passage' (devapatha) is called devapatha (V.3.100). What can such a passage or road possibly be so as to deserve the comparison involved? According to Kautilya the wide road on the top of the parapet built along the line of battlements (indrakosas) was called devapatha (Arth. Text, II.3, p. 52; Trans. p. 51). The height of the brick fort-wall (prākāra) above the mud-rampart (vapra) is there stated to be thirty-six feet rising from the ground level1, and the battlements were built above it. The deva-patha extending along the city-wall should be understood with reference to its great height resembling the celestial passage (devapatha) in the heavens, justifying the comparison of the former with the latter (V.3.100).2 The Ragbuvainsa (XIII.19) also refers to devapatha (=surapatha) as an altitude in the stratospheric measurements. We learn from later literature that the walled town of Pāṭaliputra became noted for its fortifications (Pāṭaliputrakāh prāšadāh) including its city-walls or palisades (Pāṭaliputrakāh prākarāh), and we find Patañjali speaking of the guide-book called Sukosalā which gave a detailed (avayavašah) description of the wonderful city-walls of Pataliputra (Bhāshya, IV.3.36. II.3.11; and IV.3.134; II.321).

CITY-GATES—The plan of the ancient walled cities was rectangular, usually square, pierced with four gates, one in the middle of each wall, facing the four quarters. (Nagarassa chatusu dvāresu, Jāt. 1.262; III.414; cf. Cities and City-Gates',

<sup>&</sup>lt;sup>1</sup> The Mahākaņha (IV.182) and Mahāsutusoma (V.478) Jātakas mention the height of a pākāra to be 18 cubits (aṭṭhārasahattha pākāram) or 27 ft. While visiting the Alwar fort I was told that the fort-wall is still built 18 cubits high from the ground level.

<sup>&</sup>lt;sup>2</sup> Vardhamāna misunderstands the point of comparison in the derivation of devapatha, when he says that the latter was so called from its possessing shady trees, supply of water and freedom from dangers in the manner of a divine road (Ganaratna, Verse 186).

p. 213). Pāṇini describes the principle which governed the naming of these city-gates in the following sūtra:

Abbinishkrāmati dvāram (IV.3.86).

i.e. 'the city-gate is named after the other city towards which it opens;' e.g. Māthuram Kānyakubja-dvāram, a gate in Kānyakubja, opening towards Mathurā.

This principle of naming the city-gates originated at least in the fifth century B.C. and has continued throughout up to our own days. Hundreds of gates built in the Mughal period derive their names in this manner, e.g. Ajmerī darwāzā, a gate situated in Delhi but named after Ajmer.

The roads leading out of the city-gates also derived their names in the same manner as stated in the following sūtra:

Tad gachchhati pathi dūtayoh (IV.3.85).

'The names of roads and couriers are derived from their destination.' For example, all the roads which proceeded in the direction of Mathura, even though they were situated in different towns, were labelled Māthura by the people of each locality. Thus the Māthura road of each city passed through its Māthura gate.

Patañjali knows of a wide net-work of roads punctuated by well-marked stages for purposes of halt and rest. He refers to the road leading from Sāketa towards Pāṭaliputra (Bhāshya, III.3.136; II.162), and again to the route leading towards Srughna (Bhāshya, I.3.25; I.281). Pāṇini also refers to the terminii of roads connecting cities. The terminus at its destination was called maryādā or limit, and the other cities on the way marked the intermediate stages at shorter (avarasmin) or longer distances of the journey (III.3.136). The Kāŝikā adds the interesting fact that these halts were counted by the need of rest and meal on the way.

Pāṇini mentions the Grand Trunk Road of North India as Uttarapatha, 'the Northern Road' (V.1.77), running from

Gandhara to the eastern country, of which the details are given by the Greek geographers.

THE CITY—We may thus picture a well laid-out city to have been equipped with a multitude of buildings, both for its defence and for the practical needs of residence and business. The fortification consisted of the moat, parapet wall and gateways, while the civil architecture had its residential buildings, business quarters (āpaṇa, III.3.119), intersected by streets (sainchara, III.3.119), royal store-houses (ending in agāra, IV.4.70, as koshṭhāgāra and bhāṇḍāgāra), king's council-hall (rājasabhā) and a number of other buildings comprised under the general term śālā, e.g. places of dramatic performance (prekshā, IV.2.80), dancing, music, concerts and sports (praharṇa-kriḍā), etc. Reference is also made to ferries (nāvya, IV.4.91).

THE VILLAGE—The villages were marked out by their natural boundaries, such as (1) forests (vana), (2) thickets (kathina, IV.4.72), (3) rivulets, (4) hills (giri), (5) jungle (jangala, VII.3.25) and prastāra (rocks, IV.4.72). The village proper consisted of houses, mostly peasant cottages (kuṭīra, V.3.88), covered with a roofing of reed and straw (chhādisheya tṛṇṇa, V.1.13). An individual house (kuṭī, V.4.95) sheltering one family (gārhapata, VI.2.42) formed the unit of village-life. The entire settlement was called vasati (IV.4.104) and a multitude of villages by the name grāmatā (IV.2.43). The village depended for its watersupply on wells (kūpa, IV.2.73), to which were attached nipānas (III.3.74) or water troughs from which cattle would drink. Wells were cleaned by specially trained labourers who acted as dredgers called udagāha or udakagāha (VI.3.60).

The area surrounding the village settlement consisted of (1) arable land (sītya, IV.4.91), (2) pasture (gochara, III.3. 119), (3) plantations of bamboo thickets (vamsa-kathina, IV.4.72), and reeds like sara (VIII.4.5) and munja (Saccharum munja, III.1.117), (4) fruit-bearing trees (phalegrahi, III.2.

26), (5) reserves of herbs and plants (aushadi-vanaspati vana, VIII.4.6), (6) forests of timber as śimśipā, śamī, plaksha and mango (VIII.4.5), and (7) waste saline tracts or ūshara land (V.2.107).

Cultivated land was divided into a number of holdings (kshetra) which are specifically defined as plots where crops were grown (dhānyānām bhavane, V.2.1). A systematic survey of agricultural land appears to have been undertaken by special officers called kshetrakara (III.2.21), who measured out each field and fixed its area (kshetra-bhakti) in terms of the kāṇḍa measure (IV.1.23); for example dvikāṇḍā kshetra-bhaktib, a field having an area equal to two kāṇḍa measures. The estimated area of individual fields was further expressed in terms of the quantity of seed required for its sowing (Tasya vāpaḥ, V.1.45). The division of arable area into separate holdings (kshetra) shows that they were held under individual ownership. The term kaidārya (IV.2.40), 'a group of fields,' probably indicates some kind of consolidated holdings.

Pastures appear to have been held in common by the village for the grazing of its cattle (grāmya-paśu-saṅgha, I.2.73). The village also had its cattle ranches called goshtha (V.2.18) or vraja (III.3.119). Settlements of cowherds (gopāla, VI. 2.78) were known as ghosha (VI.2.85).

The site of the ranches was subject to shifting owing to exigencies of fodder. According to Pāṇini: 'A place which had formerly been occupied by a goshtha was called gaushthāna' (Goshthāt khaŭ bhūtapūrve, V.2.18). The entire village land was marked out, as today, for habitation, grazing, dumping of manure, and agriculture, the last three shifting after every twelve years. The plot for grazing was goshtha when in use, and gaushthīna after it was abandoned.

The village land was distinct from a forest (aranya), the abode of wild people (āranyaka manushya, IV.2.129) and wild animals (āranya pašu). The forests were also used for grazing of domestic animals (grāmya-paŝu-saṅgha, I.2.73). When

a particular range was denuded of its fodder supply, it was called āśitaingavīna (V.4.7), i.e., 'the area where the cattle had eaten up all its fodder.' The herdsmen then moved the ranch to a different area which was called goshpada deśa (for the use of cattle, VI.1.145). In the same sūtra Pāṇini refers to forests not so used (asevita) by cattle (agoshpada, VI.1.145), as they were too dense and impenetrable (mahāvana, Kāśikā).

### CH. III, SECTION 11. FURNITURE

The progress of civilisation brought with it certain amenities, such as furniture to make life easy and homes comfortable. Furniture was of two main classes, viz. śayana, for lying down and āsana, for sitting, as mentioned by Pāṇini (VI.2.151). The word śayanāsana corresponds to Pāli senāsana which signified 'furniture.'

As examples of household furniture Pāṇini mentions śayyā, bed (III.3.99); khaṭvā, cot (II.1.126); paryaṅka or palyaṅka, couch (VIII.2.22); āsandī,¹ settee or royal throne (VIII.2.12); vishṭara, an ordinary seat (āsana, VIII.3.93); and parpa a wheeled-chair for disabled persons (IV.4.10). One using a parpa was called parpika, evidently same as pīṭha-sarpī of the Vājasaneyī Saṁhitā (XXX.24), Manu (VIII.394) and the Jātakas.

UTENSILS—Of these Pāṇini mentions (1) pātra, a vessel (VIII.3.46); kumbha, a big jar (VIII.3.46); (3) kamsa, a pot or vessel of bell-metal (cf. Vedic Index, I.130) which owing to its fragility attracted the attention of the Greeks as breaking, if it fell, like earthenware (cf. Nearchus, Frag. 7, Strabo, XV); (4) kuṇḍī, a bowl in different sizes of stone or wood (IV.1.42; also called amatra by Pāṇini); (5) sthālī, a cooking pot (V.1.70), from which was derived the phrase sthālībilīya, applied to a dainty article of food; (6) ukhā frying-pan (IV.2.17), a Vedic term (Vedic Index, I.83); (7) kalaši, a small pitcher or vessel (IV.3.56); (8) kapāla, śarāva, earthen pots (VI.2.29) and pots of different shapes for holding water (udaka-pūrayitavya, VI.3.59), all coming

<sup>&</sup>lt;sup>1</sup> Āsandī (settee) is an old Vedic word. Pāṇini uses Āsandīvat, which was also the name of the royal city of Janamejaya (Vedic Index, I.72), so called because of its 'possessing the throne.' The Kāšikā equates Āsandīvat with Ahisthala (VIII.1.12).

under the term kaulālaka, pottery (IV.3.118), on account of their being made by a kulāla or potter. Pottery has from time immemorial played an important role in the domestic economy of India, specially at communal feasts. Indian pottery with its long history reaching back to the age of Mohenjodaro reveals a surprising range of shapes, sizes and designs—worthy of illustration in a Corpus. At one end of this series stands the giant kusūla (VI.2.102) and at the other the tiny śarāva, or bowl (VI.2.29).

Other household articles included the winnowing basket (śūrpa, V.1.26), the churning stick (mantha, also called vaišākha, V.1.110)<sup>1</sup> and spits for roasting meat (śūla, IV.2. 17).

CONTAINERS-Pāṇini refers to leathern containers of big and small sizes called kutū and kutupa respectively (V.3.89), used for storing oil and ghee (charmamayani sneba-bhājanani, Kāśikā); to udainka, oil-flasks (III.3.123), the opposite of which was udanchana, a big leathern bucket for lifting well-water; and to driti (IV.3.56) and bhastrā, (IV.4.16). Driti, a leather bag for holding fluids is frequently mentioned in the Vedic literature. Pănini derives darteya to denote that which was filled in a leather bag (tatra bhavah, IV.3.53). We learn from the Panchaviniśa Brāhmana that milk (kshīra) and liquor (surā) were kept in dritis.2 At present it is generally used to hold water. In Panini's time dritis, leather bags, were transported on the back of animals which were therefore marked out as dritibari (III.2.25). This device of transporting liquids was preferred in mountainous regions where wheeled traffic was difficult.

BHASTRĀ (IV.4.16) - In the Satapatha Brāhmana (I.1.2.7;

<sup>&</sup>lt;sup>1</sup> Vaišākha as a synonym of mantha still persists in the Hindi word baisākhi denoting the crutches of a lame person which exactly resemble an upturned churning stick.

<sup>&</sup>lt;sup>2</sup> Surā-dṛitinā upavasathain dhāvayati, P. Br. XIV.11.26; Sakshīra-dṛitayo rathā bhavanti, P. Br. XVI. 13.13.

6.3.16) bhastrā denotes a leathern pouch. Pāṇini derives bhastrika in the particular sense of one who conveys with a bhastrā (IV.4.16). The bhastrikas seem to have formed a special class of carriers engaged in river-transport by means of skin bags. The use of bhastrā extended to the north-west where the people used its variant form as bhastrakā, instead of bhastrikā (VII.3.47).

Goṇī is mentioned as a container or sack (āvaḥana) made from goṇa (IV.1.42), obviously a cloth. It is unknown in the Vedic literature, but occurs in the Brahmajāla Sutta XV as goṇaka, explained as a woollen cloth made from the hair of long-haired goats. It was probably the same as kaunakès, one-piece loin cloth worn by the early Sumerians and the Accadians, and made of suspended loops of wool hanging from a woollen skirt (Marshall, Indus Valley Civ., I.33, 342; pl. 95, fig. 10). The word seems to have travelled to India through commerce in pre-Pāṇinian times.

We are enabled to make some idea of the use of goni, as it is still known by its old name (cf. Hindi gaun or goni) and used to carry grain, salt, etc. on pack animals. Pāṇini knows of goṇi in two sizes, bigger, which was also the standard size. called goṇi itself, and smaller goṇitari. The former was naturally used to load on mules and asses and the latter on goats and sheep. The standard one also served as an article useful for barter, as shown by the Kāśikā on the sūtra Id-goṇyāḥ (I.2.50) mentioning a piece of cloth purchased for 5 or 10 goṇis (pañchabhiḥ goṇibhiḥ krītaḥ paṭaḥ pancha-goṇiḥ; daśa-goṇiḥ).

VIVADHA (IV.4.17), VIVADHA<sup>1</sup> (VI.3.60)—This was a device to carry loads suspended from the ends of a pole by professional carriers, and is still in use. Drinking water from

<sup>&</sup>lt;sup>1</sup> Both long and short forms are used by Pāṇini himself, and hence Patañjali reads the long form vivadha also in sūtra, IV.4.17. Another equivalent of vivadha was vihangikā (hahāgi in Hindi).

the village well was carried in this manner by persons called udaka-bāra and udabāra (VI.3.60, modern kabār). The vīvadba hung from their shoulders containing pitchers full of water was called udaka-vīvadba or udavīvadba (VI.3.60). Kautilya uses vīvadba in the technical sense of supply or transport (Arth. XII.4, p. 388; Trans. p. 417).

STORAGE—Pāṇini refers to several forms of storage vessels in sūtra, VI.2.102, for example (1) kusūla, a large cylindrical vessel for storage of grain, made of earth and rising to more than a man's height with a capacity to hold 15 to 20 maunds; (2) kumbha, a big earthen jar with a narrow mouth; (3) kūpa, a form of storage resembling a well and consisting of a series of earthen rings arranged one above the other; and (4) śālā, a masonry structure or store-room specially built for the purpose. The opening near their bottom for taking out corn was called bila.

## CH. III, SECTION 12. CONVEYANCES

The means of transport are referred to as vahya (III.1. 102) or vāhana, which was of two kinds, viz. vehicles for carrying load on land (as in the sūtra Vāhanam āhitāt, VIII.4.8.), and means of transport in water called vāhana or uda-vāhana (VI.3.58). The name of the load-bearing cart was specified according to the nature of its load (āhita), e.g. ikshu-vāhana, šara-vāhaṇa, darbha-vāhaṇa. Šakaṭa denoted the waggon for carrying goods, with sturdy bulls called šākaṭa (IV.4.80) yoked to it. (Cf. Vedic Index, II.345). Patañjali refers to caravans of carts (šakaṭa-sārtha) passing along highways (III.2.115; II.120). In Buddhist literature numerous references to merchants conveying their goods and merchandise across the country, in caravans of 500 carts are met with, indicating the growing importance of wheeled traffic (šakaṭa) for transport of heavy goods.

CHARIOT—Ratha (IV.2.10 etc.) was the more aristocratic conveyance. A collection of chariots is referred to as rathyā and ratha-kaṭyā (IV.2.50-51). The use of chariots for army was also known. Pāṇini refers to the divisions of an army (senāṅga, II.4.2), which according to the commentary included chariot-men and horsemen (rathikāšvāroham).

Several kinds of chariots were known, each named after the draught animal yoked to it (IV.3.122). On this Patañ-jali mentions chariots drawn by horses (āśvaratha), camels (aushtra-ratha) and asses (gārdabha-ratha; Bhāshya, II.318). Naturally the wheels and other parts of a camel-chariot must

<sup>&</sup>lt;sup>1</sup> The Mabâniddesa refers to oṭṭha and khara yānas and Jāt. VI. 355 to assatarī ratha. cf. Conveyances by G. P. Majumdar, Indian Culture, Vol. II.277. Also Vedic Index, II.202, for horses, asses and mules yoked to chariots.

have differed in dimension from others to suit the size of the yoked animal. The carpenter's vocabulary must have expressed this distinction by appropriate terms derived from the name of the draught-animal, and Pāṇini makes a provision in sūtra IV.3.122, Patra-pūrvād-aū. For example, a pair of wheels was labelled variously as āśva-ratha-, aushṭra-ratha- or gārdabha-ratha-chakra (Pat. II.318 and Kāśikā) according to the kind of chariot for which it was required.

Pāṇini refers to the various parts of a chariot (rathānga) under the name of apaskara (VI.1.149). According to a vārttika on IV.3.121, rathya denoted parts of a chariot, as wheel, axle, etc. This special term derived from ratha seems to have been required in the cartwright's vocabulary to distinguish the chariot-parts from those of a cart, which were neither so costly nor so nicely built.

Upadhi denoted the part of a wheel between the nave and the circumference to which spokes were fitted. The cartwrights take special care in the selection of wood to make upadhi and hence the special word aupadheya (V.1.13) became current. The axle is called aksha (V.4.74). In sūtra VI.3.104 Pānini refers to kāksha in the sense of an inferior (kutsita) axle. The inferiority may be due to diminution in its standard length, which according to the Sulba Sūtra of Apastamba was 104 angulas (=78 inches, or 61/2 ft.) (Vedic Index II.206). Pānini also refers to inferior chariots (kad-rathas, VI.3.102), being below the standard size. As against this, were the parama-ratha (superior chariots), implied in sūtra IV.3.121, both on the authority of Kātyāyana and Patañjali (Bhāshya, I.1.72, vārt, 16, I.186). According to the Apastamba Sulba Sūtra the dimensions of a chariot of standard size were: pole =188 angulas, 113/4 ft; axle=104 angulas, 61/2 ft.; yoke=86 angulas, 5 ft. 41/2 inches (Apastamba Sulba Sutra, Mysore edition, p. 95; Vedic Index, II.203). The epithets kad-ratha and barama-ratha became current in relation to some such specification of standard size.

CHARIOT-UPHOLSTERY—After fabrication, the chariots were upholstered (Parivrito rathah, IV.2.10) of which the Kāšikā mentions three varieties, viz. vāstra, kāmbala and chārmaṇa, i.e. mounted with cloth, blanket and leather. Chariots covered with a special woollen stuff known as pāṇḍu-kambala¹ were called pāṇḍu-kambalā (IV.2.11). According to the Vessantara Jātaka, pāṇḍu-kambala was a kind of red-coloured blanket imported from Gandhāra (Vessantara Jātaka, VI.500, Indagopaka-vaṇṇābhā Gandhārā paṇḍu-kambalā), which, as the commentary adds, were of red colour and used for the army (Jāt. Commentary, Vol. VI. p. 501, Gandhāra-raṭṭhe uppannā satasahassagghanikā senāya pārutā ratta-kambalā).

Leopard and tiger skins were also in use for special upholstery, the chariots so covered being called dvaipa and vaiyāghra respectively (IV.2.12). The earliest reference to vaiyāghra chariots used in the ceremony of royal consecration is found in the Atharvaveda (Vyāghro adhi vaiyāghre vikramasva, IV.8.4). It is interesting to note that like pāndukambala the dvaipa and vaiyāghra chariots also had become popular in the epics and the Jātakas. A verse in the Vessantara Jātaka records the gift of 700 such conveyances by prince Vessantara (Satta rathasate datvā dipe atho pi veyyagghe, Vessantara Jātaka, VI.503), which the commentary explains as dīpichamma-vyagghachamma-parikkbitte.

The Mahājanaka Jātaka refers in a song to artistically decorated dīpa and veyaggha chariots (Jāt. VI, pp. 48-50). It appears that chariots so upholstered were intended for royalty. Rāma mounts the vaiyāghra chariot on the eve of his proposed consecration as heir-apparent (Rāmāyana, II.16.28). Among the presents brought to Yudhishthira by kings of the Prāchya

<sup>&</sup>lt;sup>1</sup> Pāṇḍukambala occurs in Sasa Jātaka (Vol. III. p. 53, Paṇḍukambala-silāsanam, rocky seat of Indra covered with pāṇḍu-kambala). Cf. also Jātaka, VI.515, for Vessantara's elephant covered with pāṇḍu-kambala, showing the wide use of this stuff in the Jātaka period.

country were included vaiyāghra chariots each valued at 1000 kārshāpaṇas (Sabhāparva, 51.33, vaiyāghra-parivārita-ratha, and 61.4, sahasra-samita vaiyāghra-rāja ratha). The scabbard of Bhīmasena is spoken of as vaiyāghra kośa (Mahābhārata, Virāṭa-parva, 38.30, 55, Poona edition).

A chariot suited for rough use on all kinds of roads was, called sarvapathīna (V.2.7). Among different classes of roads Kautilya specially mentions one called rathapatha being 7½ ft. wide (Arth. Text, II. 4., p. 54).

RUNNING FOOTMEN—In sūtra VIII.3.75, Pāṇini states that the word-form pariskanda is current in the usage of the eastern people and of the Bharata janapada. It implies that in the idiom of the Udīchyas it was called parishkanda (cerebralised form), which occurs five times in the Vrātya hymn of the Atharvaveda. Pariskanda denoted running foot-soldiers one on each side of a war-chariot (Vedic Index, I.497)<sup>2</sup>, who are referred to as chakra-raksha in the Bhīshmaparva (18.16).

A TERM OF CART-WRIGHTS—Sūtra I.4.78, Prādbvam bandhane, implies several stages in the making of carts and chariots. The idiom prādhvam-kritya, 'tying with cords,' refers to the final phase through which each vehicle has to pass in the process of manufacture before it becomes road-worthy. The carpenter first proceeds to prepare the different parts of a chariot (rathānga) one by one, as wheel, axle, pole, yoke, etc., and then assembles them together. Patañjali says that the parts of a chariot lying singly are not fit for locomotion and that only when they are assembled as chariot they contribute to movement (vraja, to move). After the frame-work is

<sup>&</sup>lt;sup>1</sup> Pariskandah Prāchya-Bharateshu. In taking Prāchya and Bharata separately, I follow Patañjali on Pān. II.4.66 (I. 493).

<sup>&</sup>lt;sup>2</sup> In the Atharva. XV.2.1. et seq. the form is dual; but Taittiriya Br. III.4.1.7, has singular, Bhumne parishkandam (=paricharakam, Bhatta-Bhāskara).

<sup>3</sup> Yathā tarbi rath-āngāni viḥritāni pratyekam vraji-kriyām praty-

ready, the third process is to mount it with upholstery. The fourth stage is that of binding the parts with cords to keep them tight together. This is generally done, not by the carmaker but by the buyer at his place. A cart or chariot, even though all its parts be ready, is not considered road-worthy, unless it has undergone this stage of cording (bandhana). Therefore the phrase prādhvain-kritya, literally 'having made it road-worthy,' has the meaning of bandhana. The counter-example prādhvain-kritvā is derived from a chariot already in use, but which gets out of order and stranded, and then subsequently repaired and put on the road.¹ According to Pāṇini prādhva (V.4.85) is that which is 'road-worthy' (prādhva ratha, prādhva śakaṭa).

asamarthāni bhavanti, tat-samudāyascha rathaḥ samarthaḥ Bhāshya, 1.2.45; 1.220.

<sup>1</sup> Cf. Kāikā, prādbvam kritvā šakaţam gataḥ. . .The grammatical interest rotates round the gati samijā of prādbvam in the sense of 'fastening' and its absence in the latter case. The effect of gati samijāā is two-fold, viz. the compound and lyap sufix in prādbvam-kritya.

# CH. III, SECTION 13. DRAUGHT-ANIMALS

A draught-animal is referred to by the peculiar term patra, from root pat, to move (III.1.121; IV.3.122-123). An animal fit to be yoked is called yugya (III.1.127). In the Tad-vahati section (IV.4.76-81) Pāṇini classifies animals on the basis of their being yoked to different vehicles and their capacity to draw various loads, as (1) rathya, bulls to draw chariots (IV.4.76); (2) śākaṭa, bulls for carts (IV.4.80); (3) hālika and (4) sairika, bulls for ploughs (IV.4.81). These distinctive terms were used in connection with the care and quantity of rations prescribed for the animals of each class, as we find in Kauṭilya (Arth. II 29, p. 131).

There are some bulls whom the drivers can yoke on both sides alternately, that is both on the right or left side of the pole. These were called sarva-dhurīna (IV.4.78) (dhura, frontal pole, Jāt.I.192). There are others who can be yoked on one side only, such being termed eka-dhurīna, the right one called uparāl in Hindi and the left one tarwāl.

We have already referred to various kinds of chariots (IV.3.122) drawn by different animals, as horse, camel, ass or bull, who must have been yoked in even numbers as two, four, etc. In addition to them sometimes a leader was yoked in front and called prashtha (Prashtho' gragāmini, VIII.3.92), for which the Vedic term was prashti, the epithet prashtivāhana or prashtivāhin being used for such a chariot (Vedic Index, II.42). In Bharhut, Sanchi and Mathurā sculptures, the chariots are drawn only by two or four horses or bulls, without a prashtha.

Păṇini refers to bull-riders (go-sāda, and gosādin, VI.2.41), camel-riders (ushṭra-sādi); to mounted officers (yuktārohin, VI.2.81), probably couriers or cavalrymen; to charioteers

(sārathi, VI.2.41); to reins (pragraha, rašmi, III.3.53); to expert bull-drivers (gosārathi, VI.2.41); and others competent to drive all kinds of animals (sarvapatrīņa, V.2.7).

ĀŚVĪNA—Āśvīna (aśva+khañ) denoted the length of journey made in one day by a horse (Aśvasy-aikāhagamaḥ, V.2.19).

In the Atharvaveda (VI.131.3) the āśvīna distance is mentioned immediately after 3 or 5 yojanas and appears to have exceeded the latter (Vedic Index, I.70). The Arthaśāstra defines precisely the āśvīna distance, as it was needed to calculate the travelling done by Government servants, and for determining the marches of cavalry or other post-chaise arrangements.

The āśvīna distances in the Arthaśāstra are as follows:-

Quality of borse	Chariot-horses			Riding borses	
Average		6 yo	ijanas	5	yojanas
		= 31	miles	=	25 1/2 miles
Middle	4.0	9 30	janas	8	yojanas
		= 46	miles	=	41 miles
Best		12 ye	rjanas	10	yojanas
		= 61	miles	-	51 miles

A yojana was equal to 5 5/44 miles.

(Arthasastra Trans. p. 149; Text, II.30, p. 134).

Thus the minimum length of one day's horse-journey in the Arthasastra is 5 yojanas for a saddle horse of ordinary quality and 6 yojanas for a carriage horse. The āśvīna distance in the Atharvaveda was more than 5 yojanas, i.e. somewhere between 6 and 8 yojanas. According to Patañjali, the distance travelled by an average horse (aśva) was 4 yojanas and by a superior horse (aśvatara, V.3.55; II.413) 8 yojanas (aśvo'yani yaś-chatvāri yojanāni gachchhati, aśvataro'yani yo'ashṭan yojanāni gachchhati).

## CH. III, SECTION 14. WATER TRANSPORT

Pāṇini refers to navigable rivers like the Sindhu, and also to samudra or ocean (IV.4.118). He knows of two kinds of islands, viz. (1) near the sea-coast (anu-samudra), and (2) in the main ocean. Goods imported from the former were called dvaipya, and from the latter dvaipa or dvaipaka (IV.3.10).

Boats are called nau (V.4.99), and also udaka-vāhana or udavāhana (VI.3.58); oars aritra (III.2.184); and a boatman, nāvika (nāvā tarati, IV.4.7).

Pāṇini refers to a boat-ferry as nāvya (IV.4.9), same as nāva-tittha (Jāt., III.330). A ferry on the Indus was located near Pāṇini's own home in Śalātura, as stated in a later inscription (Śala-no-krama). The Indus near this place is crossed by a boat-bridge for eight months of the year, and for the remaining four months the passage is effected by a ferry (Imp. Gazetteer, Vol. 1.382).

The worth of merchants was assessed in terms of the number of shiploads of merchandise, e.g., dvināva-dhana, a merchant having two cargo boats (Nāvo-dvigoḥ, V.4.99; Kāśikā). One who was sailing with five ship-loads was called pañchanāva-priya. A shipment arriving with two cargo boats was designated as dvināva-rūþya.

Supposing a full consignment of riverine trade was comprised of a hundred boats, it would happen that at important landing places, the cargo of some of these boats was unloaded and disposed of by exchange with other local goods, which latter were reladen on the boats. Such transactions are referred to by the Kāšikā as pañchanau, daša-nau (pañchabhih

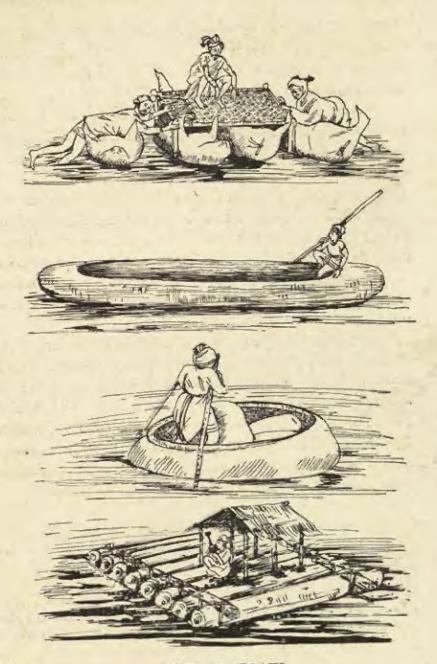
<sup>&</sup>lt;sup>1</sup> Sten Konow, Corpus of Kharoshthi Inscriptions, Shakardarra Well Inscription, p. 159. An ancient copy of this inscription is now deposited in the Machura Museum.

naubhih krītāh; V.4.99). A trader would own either the whole cargo boat or was sharing only a part of its merchandise. The cargo of 'half-a-boat' as well as its sale proceeds would be called ardha-nāva (Ardhāchcha, V.4.100).

Pāṇini also refers to another popular method of water transport called bhastrā, a raft of inflated skins; one who carried goods in this way was called bhastrika (IV.4.16; Bhastrayā-harati). This method of crossing is frequently resorted to in the flooded rivers of the Panjab, the N.W.F.-P., and Afghanistan and is considered the safest and quickest (see Imp. Gaz., N.W.F.-P., pp. 117-118). In Persia also the Behistun Ins. refers to "floats-of-skin" (mashkākhuvā) used by Darius. Examples are seen sculptured on Assyian panels from Sennacherib's palace, and Herodotus also mentions this cargo-raft on the Tigris.

In the previous sūtra Haratyutsaingādibhyaḥ (IV.4.15) reference is made to transporting by means of utsainga, a kind of small dug-out float, called chaing in Sindh, similar to the Roman cumba, a small boat made originally from the hollow of a tree and used on rivers and lakes by fishermen; udupa, another small boat shaped like the half-moon (cf. Hindi dongī), utpata, probably a longish fishing boat; and piṭaka, a basket-like coracle made of weeds and rushes covered with leather.

In Baltistan such contraptions are called zak (from Tibetan yak skins). A zak is now a raft of sewn-up goat skins, one leg of each left open for inflation. The skins are tied to a platform of sticks or have a fisherman's net spread on them on which the passengers travel at the rate of eight miles an hour, the Shighar zak consisting of four rows of four skins. In the Panjab a rude raft is made by tying together two inflated bullock-skins, with a charpoy on it for passengers. The rafts are so light that on reaching a downstream destination the crew merely pick them up and walk back along the bank with them. For the skin-raft (bhastrā), coracle (pitaka), dugout float (kānda-plava, Kāšikā, IV.4.5), see Hornell, Primitive Types of Water Transport in Asia, J.R.A.S., 1946, pp. 124-141.



#### TYPES OF BOATS

Bhastrā (inflated skins) Utsańga (cumba) Piţaka (coracle) Bharaţa (float of wood)



# CH. III, SECTION 15. GAMES AND AMUSEMENTS

SPORTS (KRĪDĀ)—The following are some of the sports (krīdās) mentioned by Pāṇini: (1) wrestling, (2) jousts, (3) hunting, (4) dicing, (5) garden pastimes, and (6) musical entertainments.

Sport was called krīdā (VI.2.74; IV.2.57). A sportsman ākrīdī (III.2.142), and the different parts of the play had their own names, e.g. anukrīdā, samkrīdā, parikrīdā and

ākrīdā (I.3.21).

SAMAJYĀ—Pāṇini refers to samajyā (a samijā in III.3.99) which Kātyāyana and Patañjali explain as a place where people flock together (samajanti tasyām samajyā, Bhāshya, II.152). We are indebted to the Jātakas for information that the samajjās (=samajyā) were special gatherings 'where crowds of men, women and children gathered together and witnessed various kinds of shows and performances, like dancing and music, combats of elephants, horses and rams, bouts at quarter-staff (dandehi yuddham) and wrestling.' (R. L. Mehta, Pre-Buddhist India, p. 355). The Vidhurapandita Jātaka refers to samajyā gatherings of men and women, and seats arranged in tiers upon tiers (mañchātimañche, Jāt. VI.277). The samajyā gatherings formed a regular feature of social life in the Mahājanapada period.

Pāṇini also refers to assemblies under the general name of samavāya (IV.4.43), which according to the commentators included samāja. A cattle-fair was known as samaja (III.3. 69), distinguished from a human assemblage (samāja), as stated above. Pāṇini explains sāmājika in two senses: (1) who attends a samāja as its member to witness its games, and (2) the convener of a samāja (IV.4.43 and IV.4.33, rakshati of the latter being taken as aiding a samāja by organizing it).

Samāja and samajyā appear to be synonymous terms, the first of wider meaning including religious gatherings also. Aśoka interdicted the popular samāja as not promoting morals.

WRESTLING—Pāṇini refers to the term saṅgrāba, i.e. gripping in wrestling (Sami mushṭau, III.3.36). Kātyāyana points out that saṅgrāba does not mean 'palm-ful' as taken by some. Patañjali's gloss is mallasya saṅgrābaḥ, mushṭikasya saṅgrābaḥ (grip of a wrestler). The Jātaka calls a wrestler muṭṭhika (Jāt. VI.277). Wrestling begins with a challenge (āhvāna, I.3.31; mallo mallam āhvayate), which is answered by a responsive action (karma-vyatihāra).

JOUSTS—Pāṇini mentions a joust as prabaraṇa-krīḍā, 'a pastime with weapons.' The name of the sport takes after the weapon used in it as prescribed in the sūtra Tadasyām prabaraṇam iti krīḍāyām ṇaḥ (IV.2.57). The Kāśikā cites as examples maushṭā (boxing) and dāṇḍā (lāthī-play). The Sarabhaṅga Jātaka describes sports of archery with such feats as arrow-stick, arrow-rope, (Jāt. V.130, sara-laṭṭhi, sara-rajju, etc.).

THE EASTERN SPORTS-Panini knows of the sports of Eastern India (Prāchāni krīdā, VI.2.74), for which he frames proper grammatical formations (II.2.17, sport-denoting words form a nitya compound, with nvul suffix). As examples the Kāšikā mentions the following: Uddālaka-bushba-bhanjikā, Vīrana-pushpa-prachāyikā, Śāla-bhañjikā, Tāla-bhañjikā (Kāśikā on VI.2.74, III.3.109 and II.2.17). Rule VI.2.74 regulating the accents in the compound-names of these sports shows that Pāṇini was acquainted with the institutions of social life and national sports of the remote regions of eastern India. THE NATURE OF EASTERN SPORTS-Some of these sports relating to the plucking of flowers (prāchya-krīḍās) are illustrated in early Indian art. According to Dr. Vogel: "It is interesting that these games are said to be peculiar to Eastern India, as this tallies with the mention of the Salabhañjikā festival in Buddhist literature. It is evidently Magadha, the cradle of Buddhism, and the neighbouring countries, that may be taken to have been its home." (The Woman and Tree or Śālabhañjikā in Indian Literature and Art, Acta Orientalia, Vol. VII. pp. 203-204).

A graphic account of these popular festivals is found in the Avadānašataka: "Once the Lord Buddha dwelt at Śrāvastī in the Jetavana, the garden of Anathapindada. Now at that very time the festival called Sālabhanjikā was being celebrated at Śrāvastī. Several hundred-thousands of beings assembled there and, having gathered sal blossoms, they played, made merry and roamed about." (Ibid. p. 201). And again quoting from the Nidanakatha (Jat. I.52) the description of the śālabhañjikā festival celebrated in the Lumbinī garden: "Now between the two towns (Kapilavatthu and Devadaha) there is an auspicious grove of sal trees belonging to the people of both cities, and called Lumbini Grove. At that time from the roots to the topmost branches it was one mass of full-blown flowers; and amidst the branches swarms of five-coloured bees, and flocks of birds of different kinds, roamed, warbling sweetly. The whole of Lumbini Grove was like a wood of variegated creepers, or the well-decorated banqueting hall of some mighty king. The Oueen beholding it was filled with the desire of disporting herself in the sala grove (salavanakilain kilitukāmatā); and the attendants entered the wood with the Queen. When she came to the root of an auspicious sala tree, she wanted to take hold of a branch of it. The branch, bending down, like a reed heated by steam, approached within reach of her hand. Stretching out her hand she took hold of the branch, and then her pains came upon her." (Cf. Rhys Davids, Buddhist Birth Stories, London 1880, Vol. I, p. 66).

The motif of the woman plucking flowers from a distended bough is met with on the toranas of Bharhut and Sānchi in the Śuṅga period and is continued on the railing pillars of Mathurā during the Kushāṇa period. It also appears in a limited number of examples in Gandhāra art of the Kushāṇa age, but the weak treatment of the subject there betrays its having been imported from the East. We have in the Kāšikā an example of a game played by people of the North known as Jīva-putra-prachāyikā.¹ Vātsyāyana in the Kāmasūtra mentions as examples of deśya krīdās (local sports) similar names ending in aka suffix, e.g. Sahakāra-bhañjikā, Abhyūsha-khādikā (cited by Kāšikā, on III.3.109), Udaka-kshvedikā,² Bisa-khādikā, Ašokottanisikā, Pushpāvachāyikā, Chūta-latikā, Damana-bhañjikā, Ikshu-bhakshikā, etc.

A feature of all such sports played by the gathering of fruits or plucking of flowers was that the plucking should be done by hand (bastādāne cherasteye, III.3.40). According to this rule the form pushpa-prachāya would not be regular unless the plucking was done by hand.

HUNTING—Hunting is referred to as lubdha-yoga (V.4.126), and a hunter was called mārgika, 'one who shoots mrigas,' and a bird-trapper pākshika or śākunika (IV.4.35). Among mrigas the Kāśikā includes not only deer, but also big game like the boar. The fowlers are said to have derived their epithets from the names of particular birds trapped by them, as māyurika, taittirika. Game-shooting was done with arrows provided with barbs (patra), and such arrows are noted by Pāṇini to have caused extreme pain (ativyathana, V.4.61). He refers to two words in connection with shooting barbed shafts, viz. saḥatrā when the arrow with the barbed end gets stuck inside the body of the animal, and nishpatrā when the barbed end pierces the body from one side with such force as to emerge on the other (V.4.61). Wounding an animal in the right flank was known as dakshinermā¹ (V.4.126) in the

<sup>1</sup> Iyam Udîchâm krîdă, Kasika, VI.2.74.

<sup>&</sup>lt;sup>2</sup> Played in Madhya-deśa according to Jayamangalā. It is depicted in the Sigiriya paintings of Ceylon, also called Śringa-krīdā,

<sup>3</sup> Paksbi-matsya-mrigan banti, IV.4.35.

<sup>\*</sup> Irms denoting 'arm, side, haunches, forequarters' was an old Rigvedic word (RV. VIII.22.4).

hunter's slang (lubdhayoga). It was less fatal than the shot in the left side, and hence the need of the term in the language, for it was of some consequence to the hunter to know whether the game had been pierced in the right or the left flank.

Pāṇini knows of the habits of big game roaring or yelling at a particular time of day or night (IV.3.51, Vyāharati mṛigaḥ), as shown in the expression (1) prādoshika (at dust) and (2) naiśika (at night). [Cf. Karṇaparva, 31. 40, krav-yādā vyāharantyete mṛigāḥ kurvanti bhairavam].

The hunters moved with a pack of hounds (Śva-ganena charati, IV.4.11). Pāṇini's śvāganika or śvaganika anticipates the śvaganin hunters mentioned in the Arthaśāstra, who were employed by the State to keep the pastures free of wild animals and thieves (lubdhaka-śvaganibhih, II. 29 p. 130). In a Bharhut scene we actually find a hunter attacking his game with hounds (Barua's Bharhut, Vol. III, fig. 146).

The fisherman is referred to as mātsyika and mainika (IV. 4.35). His equipment consisted of a net called jāla and ānāya (III.3.124).

DICING (AKSHA-DYŪTA)—Dicing is mentioned as a game from the time of Rigveda onwards. It is referred to as akshadyūta (IV.4.19) or simply dyūta (III.3.37) in the Ashṭādhyāyī. Pāṇini records a grammatical idiom according to which the words denoting the objects with which the game was played were connected with the verb div either in the instrumental or accusative case (I.4.4, Divah karma cha). For example 'akshān dīvyatī and akshair dīvyatī' (he plays with dice) were both used, probably from the fact that the game and its accessories of play were both called aksha.

Pāṇini calls a dicer ākshika (Tena dīvyati, IV.4.2.). Patañjali says that kitava and dhūrta formed part of the Śauṇḍādi group (II.1.40) and he refers to a practised gambler as aksha-kitava and aksha-dhūrta (Bhāshya, I.390). Kitava, 'a gambler,' was an old Vedic word (Vedic Index, I.156-7),

used also in the Buddhist literature (cf. asippa dhuttaka and sikkhita kitava, Jāt. VI.228; also Dhammapada, verse 252) and the Mahābhārata (Sabhāparva, 58.9).1

ACCESSORIES OF PLAY—Pāṇini refers to two distinct methods of the game, i.e., one played by akshas, and the other played by śalākās (II.1.10). A player with the former was called ākshika and with the latter śālākika (cf. Kāśikā on Pāṇini, IV.4.2). The Arthaśāstra also refers to both of these, stating that the Superintendent of Dicing shall supply aksha and śalākā to the players (Artha. III.20. p. 198). The akshas seem to have been cubical and the śalākās oblong pieces marked on the sides with points or numbers. In the representation of the gambling scene at Bharhut the akshas are shown as little cubes (Cunningham, Stupa of Bharhut, pl. XLV).

The manner in which the game was played in olden days differed from that current today. At present only two pieces are used. But in ancient times the number of dice was five, at least so in the Brāhmaṇa period. In the Taittirīya Brāhmaṇa it is said that 'he hands to the king five dice, for these are all the dice' (Tait. Brāh. 1.7.10). These pieces were called Aksharāja, Krita, Tretā, Dvāpara and Kali (Vedic Index, 1.3). The game as it was known to Pāṇini must have been played with five dice pieces as the form chatushpari 'an unlucky throw by four' (II.1.10) shows. The Kāsikā, Chandra and Kaiyaṭa agree that the game implied in sūtra, II.1.10 was paūchikā dyūta.

METHOD OF PLAY-Pāṇini throws light on the method of play in the following:

Aksha-śalākā-sankhyāh pariņā (II.1.10).

The words aksha and śalākā and the numerals (up to four) are compounded with pari to form an Avyayībhāva compound,

17..., kitava is used here in the usual sense of "gambler" without any special pejorative meaning.' (K. de Vreese, "The Game of Dice in ancient India (The Vibhitaka Game)," Orientalia Neerlandica, Lieden (1948), p. 352. The interpretation of kitava by "cheat" does not suit the context.

when, as observed by Kātyāyana, the resultant words denote gambler's throws (kitava-vyavahāra, vārt. on II.1.10). Thus we have the following forms:

- 1. Aksha-pari;
- 2. Śalākā-pari;
- 3. Eka-pari;
- 4. Dvi-pari;
- 5. Tri-pari;
- 6. Chatush-pari.

The forms were used to indicate a deviation from the winning throw. The Panchika game was played with five dice or five ivory pieces. When all these five pieces fall with faces turned upward, or all with faces turned down, then the thrower wins the game. But when the fall is otherwise, he loses it (Kāśikā on II.1.10). For example, when four pieces fall alike and one is different, the dicer exclaims: Akshapari!, Salākāpari!, Ekapari!, i.e. missed by a single aksha or by a single salākā. The expression ekapari was synonymous with akshapari and śalākā pari as shown in the Kāšikā cited in the Bhāshya (ekatve'ksha-salākayoh, I.379). If the throw fell amiss by two, it was called dvi-pari; if 'by three,' tripari; and if 'by four,' chatushpari. When all the five pieces fell uniformly the throw was called a winning throw of which the technical name was Krita. The name for the losing throw was Kali. According to the Dhammapada a deceitful player (kitavo satho) tries to conceal his losing or kali throw (verse 252). In the Bhūridatta-Jātaka-Vatthu, kali and krita are contrasted (Kalī bi dhiranam katam muganam, 'Loss to the wise, a gain to the fool,' J.R.A.S., 1892, p. 127; also Jat. VI.228). In the Chhāndogya Upanishad (IV.1.4) krita is the winning throw. In the Sabhāparva (52.13) Śakuni is described by Vidura as krita-basta, i.e. one who takes a winning throw. Panini also refers to these two kinds of throws:

Kritam gribnāti—kritayati Kalim gribnāti—kalayati<sup>1</sup> (III.1.21)

These must have been current expressions used during the progress of the game when a player scored a winning or a losing throw. In the Vidhurapandita Jātaka (545) a graphic description of the gambling scene between the Kuru king and the Yakkha Puṇṇaka is given and there an expression identical with that of Pāṇini is used:

'rājā kalim vichinam aggahesi, kaṭam aggahī Puṇṇako pi yakkho.'

'The king played the losing throw and the Yakkha Puṇṇaka the winning throw.' (Jāt. Text, VI. 282; Trans. VI 138). It is stated there that the Yaksha was reshuffling with his miraculous powers such dice as were falling against him. The bhassamāna pāsaka (missing dice) of the Jātaka correspond to Pāṇini's ekapari, etc. It also appears that so long as a player was taking the krita throw he went on repeating his throws. But after the kali throw, the turn went to the other player. When once either Śakuni or Puṇṇaka begins to win deceitfully, he continues to throw the dice up to the end of the game.

WAGER (GLAHA)—Sakuni opined that dicing, a noble game, was maligned only because of its association with a stake (aksha-glaha, Sabhā, 59.8). According to Pāṇini glaha is irregularly derived when it relates to the vocabulary of dicing (Aksheshu glahah, III.3.70). According to the Vedic Index, glaha was a later form used in the Atharvaveda for grābha of the Rigveda meaning a 'throw' at dice (I.248). This may be its original meaning, but in classical Sanskrit glaha always denoted the stake and not the throw (Cf. Yaj. Smṛiti, II.199 as rendered by Mitāksharā, kitava-parikal pita paṇa; also Sabhā-

<sup>&</sup>lt;sup>1</sup> The sūtra deliberately reads kala instead of kali, as shown by Kātyāyana's vārtlika 'hali-kalyoratva-nipātanam (Bhāshya, II.28), which says that there can be no desiderative form in kalayati, since no one would wish for himself a losing throw.

parva, Dyūta Section where it invariably means a wager). This meaning Pāṇini had in view. Other references in Pāṇini to wager or stake-money are śatasya vyavaharati, śatasya paṇate (II.3.57), śatasya dīvyati (II.3.58), śatasya pratidīvyati (II.3.59), all denoting 'he stakes a hundred rupees' in dyūta.¹

According to the testimony of the Vedic literature, Jātakas, Mahābhārata (Sabhāparva) and Kauṭilya dicing was a game played in a sabhā. The Arthasāstra prescribes 5 p.c. as Government fee to be realised on the amount of wager (Arth. III.20 p. 198). This would correspond to pañchakaḥ (pañchāsmin āyah), cited in the Kāsikā to illustrate sūtra, V.1.47.

ANOTHER BOARD GAME—Pāṇini also refers to a game resembling draughts or the Indian chaupar, which must have been played on a board (ākarsha, V.2.64) divided into squares, and in which the essential thing was the movement of the gamesmen from square to square in accordance with the results of the throw of the rival players. The gamesmen were known as śāra and the movement of the pieces as parināya (pari+nāya in the sense of dyūta, III.3.37), parināyena banti śārān (example on Pāṇini, III.3.37), i.e. he hits the rival gamesmen by an encircling movement (samantan-nayanena) of his own pieces.

Ayānayīna, a technical term mentioned in sūtra, V.2.9, denoted a gamesman fit to be moved to a square of safety. Patañjali comments on its meaning: 'By giving the sense as 'that which is to be carried to ayānaya' the meaning is not made quite clear as to which is naya and which is anaya.' (To this we reply). 'The right hand move is aya and the left hand move anaya. (The pieces move both right and left with reference to the rival players seated opposite to each other). That square is called ayānaya in which pieces coming both from right and left (which virtually means the gamesmen of both players) are not attacked by their rivals. The gamesman that is desired

Another sense of all these sentences is: he deals in sale and purchase transactions worth one hundred rupees (kraya-vikraya-vyavahāra).

to be moved to such a safe square is spoken of as ayānayīna.' Bhāshya, II.373). On each side of the board there are such checkered squares in which rival gamesmen may rest without being attacked. This description holds good in the case of chaupar which thus appears to be an old game.

### CH. III, SECTION 16. MUSIC

The tradition of the musical art in India is of high antiquity. In the sculptures at Bharhut and Sanchi both vocal and instrumental musicians are found frequently represented. In the Arthāśāstra of Kauṭilya music and musicians are often mentioned. In the Jātaka literature music forms a chief item of social and individual entertainment. Pāṇini's Ashṭādhyāyī which in point reflects an even earlier stage of culture, shows an equally full acquaintance with the various branches of the musical art. Besides referring to vocalists and instrumentalists, the Ashṭādhyāyī also mentions orchestral bands including singers to the accompaniment of vīnā, one of the most popular instruments in ancient Indian music.

MUSIC, A ŚILPA—In Pāṇini's days music was regarded as an art (śilpa). Not only instrumental music as cymbals, tabor, (IV.4.55-56) but also dance (III.1.145) and vocal music (III. 1.146-47) are mentioned under the category of śilpa. In the Jātakas also music is a sippa.

Music comprised nritya (dance), gīta (song), vāditra (instrumental music), and sometimes also nātya (stage-acting). The Khantivādi Jātaka mentions these four branches together as part of royal entertainment (gīta-vādita-nachchesu chekā nāṭakitthiyo gītādīni payojayimsu, Jāt. III.40). Kauṭilya also treats gīta, vādya, nritta, and nāṭya as parts of music (Arth. II.27, p. 125). The Ashṭādhyāyi refers to all of them, e.g. song is referred to as gīti (III.3.95) and geya (III.4.68), a vocal singer as gāthaka (III.1.146) and gāyana (III.1.147), a songstress as gāthikā and gāyanī, a dancer as nartaka (III.1.145) as explained by Patañjali), dance as nritya (I.3.89, VII.2.57), and a player on an instrument as parivādaka (III.2.146). Stage acting is mentioned as nāṭya (IV.3.129).

Pāṇini's reference to a treatise called the Națasūtra (IV.3.110) shows that the theoretical side of the dramatic art was also studied.

ORCHESTRA-The idea of having a concert of different instrumentalists was known to Pāṇini. The band was collectively known as tūrya, and individual members tūryānga (II.4.2). In concert two allied instrumentalists were grouped together, and the group was denoted by a compound in the singular number (II.4.2). For example, the set of players on mridanga and panava was referred to as mardangikapānavikam. The Kāśikā adds to this vīnāvādaka (luteplayer) - parivādakam. Pāņini refers to parivādaka in sūtra, III.2.146 without stating its meaning. It appears that parivādaka was a player on a stringed instrument. Patanjali, considers parivādaka as a lute-player (Bhāshya, VII.4.1; III.345; avīvadad-vīņām parivādakena). Pāņini refers to vīņā in several sūtras (III.3.65), and we learn from the Jātakas that vīnā formed part of an orchestral band (vīnādīni turiyāni, Jat. III.40).

SAMMADA—Pāṇini explains sammada and pramada as festivity (barsha, III.3.68). It was a kind of opera as illustrated in a sculpture at Bharhut, inscribed as 'Sāḍakam sammadam turam devānam,' an opera (saṭṭaka) comprising both instrumental and vocal music performed in the palace of gods (Barua Barhut, Book I, plate 2; also Book III, Fig. 34). The scene shows several groups, namely, singers, four female dancers, and an orchestral band (tūrya) comprising of female lyreplayers, a hand-clapper, a cymbalist and a taborer. According to the Nidāna-kathā a tūrya party consisted of players on five musical instruments (pañchangika tūrya, Jāt. I.32), probably by adding a flute-player to the four represented in the Bharhut scene. Sammada, therefore, appears to have been a festive celebration in which dance and music played an essential part.

INSTRUMENTS-Amongst stringed instruments the lyre

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(vīṇā) is mentioned. The term upavīṇayati, 'sings with the lyre,' points to the popular practice of combining vocal and instrumental music. Singing without lyre was denoted by the expression apavīṇam (VI.2.187). The musical notes produced from a lyre were known as nikvaṇa or nikvāṇa (III.3.65, Kvaṇo vīṇāyām cha).

Of the percussion and ringing instruments mention is made of madduka, a small tabor (IV.4.56) and jharjhara (IV.4.56), the players being known as māddukika and jhārjharika, taborers and cymbalists, respectively. Keeping time by the clapping of palm is referred to in the expressions pānigha and tālagha (III.2.55; cf. pānissara or clapper in the Vidhurapandita Jāt. VI.267).

The dārdurika seems to have been a player on a drum made of an earthen jar (IV.4.34). In the Jātakas we find kumbha-thūnika mentioned in a list of musical players which the commentary explains as ghāṭadaddara-vādaka (Jāt. VI.276). The Kāśikā explains dārdurika as a potter, signifying one who was the maker of those particular pots used as vādya-bhānḍa.

#### CH. III, SECTION 17. DIVISIONS OF TIME

AKĀLAKA VYĀKARANA-Pānini's system of grammar became known to the ancients as a grammar without 'time' (akālaka). The Kāśikā repeats thrice the statement that Pānini was the promulgator of a grammatical treatise from which he excluded the discussion of the precise denotation of the various time-divisions (Kāšikā, II.4.21; IV.3.115; VI.2.14; also Chandravritti, II.2.68, Paniny-upajnam akalakam vyakaranam). 'How much is the duration of the day, when does present (varlamana) end and future (bhavishya) begin, what is advatana, and how much interval of time makes paroksha, etc.?-these are questions considered by Pāṇini as not coming within the province of grammar, but to be decided with reference to current usage (I.2.57, Kālopasarjane cha tulyam). Patañjali tells us that other teachers had entered into hairsplitting discussions about these matters (Bhāshya, III.2.123; H.123).

Pāṇini, however, deals with the general divisions of time (kāla-vibhāgas, III.3.136), e.g., night and day (ahorātra, III.3.137), fortnight (paksha, V.2.25), month (māsa, V.1.81), half-year (shaṇmāsa, V.1.83), year (varsha, V.1.88), and the solstitial division (ayana, VII.4.25).

The more frequent word for time was kāla, although samaya and velā are also used (III.3.167). According to an unnamed author of a vārttika on Pāṇini, VII.3.15, the word parimāṇa in the Ashṭādhyāyī applies to measures other than those of time (Bhāshya, III.321). Pāṇini, however, treats Time as a measure of life (kālāh parimāṇinā, II.2.5); for example, a person after birth comes under the measure of time as dvyaha-, tryaha-, māsa-, saṃvatsara-jātaḥ. On the above sūtra Pataṇjali notes an important fact that time is an entity

by which growth and decay of visible objects are indicated and that the movement of the sun (āditya-gati, I.409) is responsible for portioning out time into days and nights, months and the year by constant repetition (asakrid-āvritti). The sun is referred to as ahaskara, maker of the day (III.2.21), and the heavenly bodies as jyotis (VI.3.85; vār. on I.3.40; Pat. I.231). Persons born under the same constellation were called sajyoti.

Pāṇini's reference to vidhun-tuda (III.2.35) points to the belief in the legend of Rāhu causing a lunar eclipse, also referred to in Vedic literature (Vedic Index, I.254; also Tāṇḍya Br.

Caland, VI.6.8).

The following time-divisions are referred to in the

Ashtādhyāyī:

AHORĀTRA (III.3.137, VI.2.33)—Night and day constitute the fundamental unit of time-reckoning. The terms naktaindivam and rātrindivam (sūtra, V.4.77) are according to Fleet rather peculiar since in India the day has always been measured from sunrise and he suggested that the forms may be due to euphonic considerations. Dr. Keith, however, thinks that they were genuine old expressions preserved in Pāṇini from a very remote past when the day was reckoned with sunset (J.R.A.S., 1916, p. 143-6). It is admitted that in the Sūtra period the day was reckoned with sunrise.

The day was further divided into pūrvāhna and aparāhna, forenoon and afternoon (IV.3.24), and the night into pūrvarātra and apararātra (V.4.87). The union of night and day in the morning and evening is referred to as samdhi-velā (IV.3.16).

The division of the day into mubūrtas was also known, the expiry of a mubūrta period being quoted as a factor to determine tenses (III.3.9; III.3.164). Patañjali on sūtra, II.1.28

<sup>&</sup>lt;sup>1</sup> Cf. also Fleet's reply (J.R.A.S., 1961, p. 356); Keith's rejoinder (p. 555) and Fleet's final reply (p. 561), in which Fleet's view seems well-grounded.

refers to a variable period of six muhūrtas (shan-muhūrtās charācharāḥ, I.384). This may be understood in the light of Kautilya who states that the day consisted of 30 muhūrtas and that the equinoctial day and night of 15 muhūrtas each fell in the month of Chaitra and Aśvayuj; the solstitial points, however, caused night and day to increase and diminish by three muhūrtas each (Artha. II.20, p. 108). These six muhūrtas representing the maximum increase of day in summer and of night in winter must have been called charāchara.

MONTH—The month consisted of the usual two pakshas of which the Amāvāsyā and the Paurņamāsī formed the closing days. Pāṇini refers to the opening day of a paksha as pakshati (V.2.25) which the Kāśikā takes as a synonym of the Pratipad

day.

Sāvana Month. The reckoning of a Sāvana month consisting of 30 days is deducible from the phrase shashti-rātra (V.I.90), literally 60 nights equivalent to two months. Kautilya also refers to a period of thirty days and nights together making one working month, (prakarma-māsa, Artha. II.20 p. 108). In this arrangement the last day of the half and the full month need not coincide with Amavasya and Paurnamāšī which were the characteristic days or parvans of a lunar month. Pāṇini derives two special words ardha-māsatama and māsa-tama to signify the last day of the half-month, and the last day of the full month respectively (V.2.57). It appears that the need for these two terms arose as they were not synonymous with Amavasya and Paurnamasi. The words ardha-māsa-tama and māsa-tama may be taken to refer to the fifteenth day and the thirtieth day of the prakarma-masa or the civil month used especially in the case of government or public offices. Patanjali clearly acquaints us with the existence of a bhritaka-māsa, month by which the wages of labourers were reckoned. Both Kātyāyana and Patanjali interpret. sūtra, IV.2.21 (Sāsmin Paurnamāsītī) in a way so as to distinguish the lunar month ending with Paurnamasi from some different reckoning (Bhāshya, II.275). The prakarma month of Kautilya seems to be the same as the bhritaka month of Patañjali.

The Sāvana month of thirty days is again referred to by Patañjali as trimisadrātra, consisting of two equal halves of fifteen days each, the first one of which was called avara pañchadasa-rātra or avara ardhamāsa, and the second by implication as para- (Bhāshya, III.3.136, II.162). It is interesting to note that Patañjali uses the term rātri for 'day' while referring to the Sāvana month of 30 days and its half of 15 days. This practice goes back to Pāṇini, who uses the word rātri (=ahorātra) in the phrase shashṭi-rātra, a period of 60 days, being twice of the Sāvana month called trimisad-rātra by Patañjali.

Lunar Month. The prevalence of a lunar calendar with a month (chāndramāsa) of 291/2 days depending on the two parvans, Amāvāsyā and Paurņamāsī was definitely known. It appears that in the Ashtadhyāyī the pūrnimānta basis of reckoning the lunar month was accepted. This is suggested by the fact that the name of the month was derived from that of the Paurnamāsī falling in it, of which Pāṇini refers to Āgrabāyanī (IV.2.22), Pbālgunī, Śravanā, Kārttikī and Chaitri (IV.2.23). In one example the settlement of a debt claim is said to fall due on the Paurnamāsī day (i.e. Āgrahāyanī, IV.3.50), this too pointing to pūrnimānta reckoning. Moreover, the use of special terms upa-paurnamāsi and upapaurnamāsam (V.4.110) meaning 'about the date of the month called Paurnamāsī,' is more likely to have become current on the basis of a purnimanta month, while no such idiom is available for amāvāsyā. Both Kātyāyana and Patañjali clearly accept Paurnamāsī as the closing day of a month (IV.2.35; II.277).

<sup>1 (</sup>Vax.) Pūrņamāsādaņ (Bh.) Pūrņamāso vartate' smin kāle Faurņamāsī tīthih (II.277).

Names of Months. Some Vedic names of months as Nabhasya, Sahasya, Tapasya are implied in sūtra, IV.4.128. But the prevailing month-names were those derived from the names of nakshatras. Dr. A. B. Keith observes that the method of naming the months from the nakshatra names began in the Brāhmanas, while it is found regularly in the Epics and later (Vedic Index, II.162). He also points out that the name of the nakshatra in the Brāhmanas is more often turned into a derivative adjective and used with Purnamāsi or Amāvāsyā, as in Phālgunī Paurnamāsī, but it is more usual in the sūtras to use the nakshatra adjective alone to denote the full-moon night (Vedic Index, I.420). The Ashtadhyayi refers to the latter practice e.g. Āgrahāyanī, Phālgunī, Śravanā, Kārttikī, Chaitri, etc. (IV.2.22-23) as names of Paurnamāsīs in which the full moon is in conjunction with the lunar mansions called Phalguni, Śravana, Krittikā, Chitrā, etc. The months in which these Paurnamasis occur are called after them (Sasmin Paurnamāsīti samjnāyām, IV.2.21).

NAKSHATRAS—Pāṇini analyses nakshatra into na-kshatra (VI.3.75), a derivation found also in the Śatapatha Brāhmaṇa (II.1.2.18, nakshatra 'no light', explained with a legend). The Nirukta, although it cites this Brāhmaṇa derivation, prefers to derive nakshatra from naksha 'to come near' (nakshater—gatikarmaṇaḥ, Nir, III.20; Cf. Vedic Index, I.409). Pāṇini strangely enough followed the Śatapatha tradition. The following Nakshatras are mentioned in the Ashṭādhyāyī;

1. Krittikā. Referred to in the form Kārttikī, the full-moon day of Krittikā (IV.2.23). Pāṇini gives another name of Krittikā as Babula (IV.3.34) which word came to signify the asterism of Pleiades on account of the knowledge that this constellation consisted of numerous stars. The Śatapatha Brāhmaṇa significantly remarks: bhūyishṭhā yat Krittikāḥ (II.1.2.3). Babula and Bhūyishṭha are interchangeable terms

according to Pānini, VI.4.158 (Bahor-lopo bbū cha bahoḥ).1

- 3. Mṛigaśīrsha. Not referred to by the name of the nakshatra, but the full-moon night called Āgrahāyaṇi is mentioned thrice (IV.2.22; IV.3.50; V.4.110). The month was named Āgrahāyaṇika (Āgrahāyaṇiko māsaḥ). Pāṇini refers to agreements for repayment of loans on the Āgrahāyaṇi day (IV.3.50). The time near about Āgrahāyaṇi was called upāgrahāyaṇam and upāgrahāyaṇi (V.4.110).
- Ārdrā (IV.3.28). A person born under Ārdā was named Ārdraka.
- 5. Punarvasu. Pāṇini knows that there were two stars in this constellation; the two stars of Punarvasu and one of Tishya make three, but they are expressed by the dual number, as Tishya-Punarvasū (I.2.63). But in sūtra, IV.3.64 he mentions Punarvasu in the singular, the form found both in the Maitrāyaṇī and Kāṭhaka Saṃhitās (Vedic Index, I.413). According to rule I.2.61 the singular form was optionally used in the Vedas.
- 6. Tishya. Besides the form Tishya (I.2.63; IV.3.34; VI.4.149), Pāṇini mentions its two other names, Pushya and Siddhya (Pushya-Siddhyau nakshatre, III.1.116). The person born under this asterism was also called Tishya (IV.3.34), a common name in the Jātakas under the form Tissa, and also Phussa from Pushya. In the Arthaśāstra, Tishya had been replaced by the form Pushya, which Patañjali also prefers (I.462; II.35). Pushya in preference to Tishya seems to be a feature of the post-Pāṇinean period.
  - 9-10. Phalguni, a double constellation called Phalgunyau;

<sup>2</sup> Fausböll, Jātaka Index, p. 64, Tissa amachebo, Tissa-kumāra, Tissa Buddha, Tissa thera, and Tissa aggasavika; also p. 89 for Phussa.

<sup>&</sup>lt;sup>1</sup> The number of stars in the Krittikā is counted seven in the Taitt. Br. III.1.41, viz. Ambā, Dulā, Nitatnī, Abbrayantī, Meghayantī, Varshayantī, Chuḥuṇikā. In classical literature this number is six, from which comes the epithet Shānmāturah as the name of Kārttikeya. Pāṇini's sūtra māturut-samkbyā... (IV.1.115) is illustrated by Dvai-mātura and Shān-mātura.

and also in the plural as Phalgunyah (I.2.60).

- 11. Hasta, IV.3.34.
- 12. Chitrā, IV.2.23, its full-moon day being called Chaitrī.
  - 13. Svāti, IV.3.34.
- 14. Višākhā, double stars, named optionally as Višākhe and Višākhā, I.2.62. The Tait. Samhitā prefers the former and the Kāṭhaka the latter form. Pāṇini himself prefers the singular form Višākhā (IV.3.34).
  - 15. Anurādhā, IV.3.34.
  - 17. Mūla, IV.3.28.
  - 18-19. Ashādhā, IV.3.34.
- 20. Abhijit, IV.3.36.
- 21. Śravaṇa, IV.2.23. The Kāṭhaka Samhitā names it as Aśvattha (Vedic Index, I.413), a term also known to Pāṇini (IV.2.5; IV.3.48). The Kāśikā takes Aśvattha as the season when the berries of the Pipal (Ficus religiosa) ripen.
  - 22. Śravishthā, IV.3.34.
  - 23. Śatabhishaj, IV.3.36.
- 24-25. Proshthapadā, a double asterism called Proshthapade and Proshthapadāh (I.2.60), and also in the masculine gender as Proshthapada (V.4.120), a form used in the Tait. Samhitā, and also by Pāṇini when speaking of the deity of this asterism (IV.2.35) to whom religious homage (bhakti) was paid by its devotees.
  - 26. Revati, IV.1.146.
- 27. Aśvayuj, IV.3.36. The Aśvayuji full-moon day was considered auspicious for sowing crops (IV.3.45).

ORDER OF NAKSHATRAS—The Vedic list of nakshatras begins with Krittikā. According to Hopkins: 'As late as Yājñavalkya's law-book, I.267, the Pleiades hold this position as opposed to the still later scheme (since c. 490 A.D.) beginning with Aśvinī to indicate the vernal equinox' (J.A.O.S., XXIV, p. 34). Patañjali's illustration Krittikā-Robinyah to

show the order of precedence in the asterisms as required by a vārttika on II.2.34 points to the fact that up to his time the Krittikās headed the list.

The question has to be considered in relation to Pāṇini from a different stand-point. In mentioning a list of about ten stars Pāṇini opens the list with Śravishṭhā;

> Śravishṭhā — Phalguny — Anurādhā — Svāti — Tishya —Punarvasu — Hasta — Višākh—Āshādhā — Bahulāluk (IV.3.34).

What does the beginning with Sravishthā indicate? Now the list of the Vedanga Jyotisha also commences with Śravishthā, and Garga says that the Krittikās are the first asterism for the ritual, while Śrāvishtha is the first for ordinary reckoning: Karmasu Krittikāh prathamam (nakshatram), Sravishthā tu samkhyāyāh (cited by Tilak, The Orion, p. 30). Hopkins who discussed this question with reference to the Mahābhārala evidence found that the Mahābhārata refers to two beginnings, viz. (1) with Dhanishtha (another name of Śravishtha) as in the Vanaparva (230. 10), and (2) with Sravana as in the Aśvamedha-parva (44.2, Śravaṇādīni rikshāṇi) (J. A. O. S. XXIV, p. 15, 34). Fleet discussing independently another Mahābhārata passage, pratisravaņa-pūrvāņi nakshatrāņi chakāra yah (Ādiparva, 71.34) showed that the 'two passages of the Mahābhārata, giving a Śravaṇādi list of the nakshatras are noteworthy as coming from a time when it was recognised that the winter solstice had travelled westwards from the first point of Śravishthā (Dhanishthā), where it was placed by the astronomy which was preserved in the Jyotisha Vedānga, and was in the preceding Nakshatra Śravana (J.R.A.S., 1916, p. 570). Pāṇini's mention of Śravishthā at the head of his list is evidently in conformity with the Vedanga astronomy and points to a time anterior to the revision of the Nakshatra list, or, as Dr. Keith would have it (J.R.A.S., 1917, p. 139), its reform by substituting Śravana for Śravishthā. The point is

of some importance for the relative chronology of Pāṇini, as explained in the last chapter.

Păṇini also subscribes to the Vedănga conception of the nakshatras as a scale divided into twenty-seven equal parts. Under this division of the ecliptic, the twelve months were named after the moon's entry into the mansion of a particular star (Nakshtrena yuktah kālaḥ, IV.2.3.). When the full-moon was in conjunction with the asterism of Chitrā, that day was known as Chaitrī Paurṇamāsī (IV.2.3), and the lunar month which included the Chaitrī Paurṇamāsī was named Chaitra (VI.2.21). The name of the star even without a suffix was used as synonymous with the time, for example, the expression adya Pushyaḥ indicated the day named after the star, as we name our days at present after the tithis like Pratipad, Dvitīyā, etc. (IV.2.4).

Pāṇini also regulates the naming of the day or night after two stars being in conjunction with the moon as Rādhānurā-

dhīya and Tishyapunarvasavīya day (IV.2.6).

Pāṇini uses the word lagna in the sense of sakta (VII.2.18) and not in the technical sense of rāšīnām udaya. According to Dr. Kaye the system of the zodiac scale of twelve divisions replaced the nakshatra division of the ecliptic at a fairly late date, probably about 450 A.D. (Kaye, The Nakshatras and Precession, Ind. Ant. Vol. 50, p. 45).

SOLISTICE—The sūtra VIII.4.25 (Ayanain cha) refers to antarayana or the time within the solstice, i.e. the period spent by the sun in proximity to the solstitial points. The alternative form antarayana denoted the countries situated within the tropics.

SEASONS AND YEAR—The year is referred to under various names as varsha (V.1.88), samā (V.1.85; V.2.12), samvatsara (V.1.87) and bāyana (III.1.148; V.1.130), the last word denoting both time and a kind of harvested paddy. The month-name Agrabāyana points to its being the first month of the year. Pāṇini also refers to the various terms

making up the five-year cycle, e.g. Idvatsara, Samvatsara, Parivatsara (V.1.91-92). The Arthasastra mentions the cycle of five years as constituting one yuga.

The year was divided into two halves, each semester being known as shan-māsa (V.1.83). The first half-year was called avarasamā, and the loan to be repaid during that period was āvarasamaka (IV.3.49).

Pāṇini names all the six seasons, e.g. vasanta (IV.3.46), grīshma (IV.3.49), varshā (IV.3.18; also called prāvrish (IV.3.17; 26), sarad (IV.3.12; 27), hemanta (IV.3.21-22) and sisira (II.4.28). Each season (ritu) comprised two months, as shown by the mention of the two parts of a season, like pūrvavārshika and aparavārshika, the first and latter part of rains (Avayayād-ritoh, VII.3.11; see also Bhāshya, I.1.72.18; I. 186 mentioning purva- and apara-sarada, and also -naidāgha). Patanjali tells us that śiśira preceded vasanta and that the winter solstice began with sisira (śiśira-vasantāv=udagayanasthau, Bhāshya, II.2.34; I.436). In the Arthasastra also uttarayana begins with sisira, consisting of the two months Magha and Phalguna (Artha. II.20 p. 109). VYUSHTA, NEW YEAR'S DAY-Pāṇini refers to Vyushta, the new year's day, and to vaiyushta, the transanctions or payments made on that day (Tatra cha diyate karyam bhavavat, V.1.96; Vyushtādibhyo'n, V.1.97). In the Varāha Śrauta Sūtra pradosha is the first yama (3 hours) of the night, and vyushta the fourth (Akulapāda Khanda III); but in the Arthasāstra (II.6-7, pp. 60 and 64) as Dr. Shamasastri has shown, vyushta denoted the New Year's day, i.e. the first day of the financial year commencing after the full-moon day of Ashādha (Artha. Trans. pp. 59, 64; Preface, xxiv; also the paper 'Vyushti or the Vedic New Year's Day' in the Proceedings of the Second Oriental Conference). Pănini seems to use vyushța in this special sense. Kautilya throws light on the nature of payments and business on this day. At the close of the financial year (raja-varsha) on the Ashadhi, the Heads of the Accounts Department reported

themselves at Headquarters with their registers in sealed boxes (samudra pusta-bhāṇḍa) and the cash balances (nīvī). There they declared the totals (agrāṇi) of the receipts (āya), expenditure (vyaya) and cash (nīvī) and then deposited the net revenue in hand. This illustrates the vaiyushṭa payments of Pāṇini (tatra cha dīyate).

Next ensued the intricate checking and verification of accounts which corresponds to the business called vaiyushṭa by Pāṇīni (tatra cha kāryam). In the Arthasāstra, Vyushṭa (i.e. cash balance on the opening day) formed the bed-rock of this checking, heading each of the three lists of audit-points (II.7.) In the Asokan Edicts, the yearly diary began on the Vyushṭa day.<sup>1</sup>

Pāṇini refers to the last day of the year as samvatsaratama (V.2.57), probably the day for the clearance of the sāmvatsarika

loans (IV.3.50, samvatsare deyam rinam).

Pāṇini refers to another allied term, viz. mahāparāhņa, 'the great afternoon' (VI.2.38). As the other words in the sūtra VI,2.38 like mahā-vrībi and Mahā-bhārata are technical terms, mahā parāhņa also appears to be of the same category. We may connect this word with the afternoon of the last day of the year, or better of Vyushta itself. The Sūryaprajñapti states that the new year began with the longest day in the month of Śrāvana (Proc. Second Oriental Conference, p.38). This day was truly a Mahāparāhna as its day-book (ahorūpa) would be long kept open for entries after verification. The Mahabharata knows this term; Arjuna returning from the svayamvara 'entered the house on the mahabarahna (day), surrounded by Brahmanas like the sun in the midst of the clouds' (mahatyathaparahne tu ghanaih surya iv-avritah, Adiparva, Critical Poona edition, 181.40). The metaphor would be appropriate only in the rainy season. The Brahmanas

<sup>2</sup> Cf Ašoka's Minor Rock Edict, Brahmagiri, for counting the days of the year from the Vyushia day: "This proclamation was issued by me on tour when 256 days had elapsed after Vyushia."

wearing black antelope skins (rauravājina-vāsibbih, Ādi. 181. 35) overshadowed Arjuna as masses of dark clouds cover the sun. This connects Mahāparāhṇa with the rainy season, and confirms its identification with Vyushṭa, i.e. the New Year's day in Śrāvaṇa, considered from the accounts point of view to be the "Longest Afternoon" of the whole year.

## CH. III, SECTION 18. CURRENT PERSONAL NAMES

Personal names always contain valuable linguistic and chronological data. Proper names of different periods are marked by special features characteristic of that age. For example, the usual method of referring to a person in the Rigueda is to give his own name along with another epithet connected with his father's name. In the later Vedic literature it was the gotra name. Sometimes the personal name was coupled with the name of the country or locality, e.g. Bhīma Vaidarbha (Ait. Br., vii.34). In the Vainša lists of the late Brāhmaṇa period we find the frequent use of metronymics. (P. V. Kane, Naming a Child or Person, I. H. Q., June 1938, pp. 227-228). On the other hand there is no evidence in Vedic literature of individual names being derived from the names of Vedic gods or stars. Such naming came into vogue in much later times with a change in religious beliefs.

CLASSES OF NAMES KNOWN TO PĀŅINI—These were of four principal classes: (1) Gotra names mentioned in Chap. IV, pāda 1 of the Ashṭādhyāyī, e.g. Gārgya. (2) Patronymics, e.g. Upagu's son called Aupagava (Tasyāpatyam, IV.1. 92). (3) Names derived from localities, where they or their ancestors lived (nivāsa and abhijana). They throw light on the geography of the country. (4) Personal names proper (manushya-nāma, V.3.78-84) which are mainly dealt with in this chapter (also referred to as samijāās, V.3.75; VI.2.106; VI.2.159; VI.2.165).

THEIR SPECIAL FEATURES—Personal names in the time of Pāṇini show three special features, viz. (1) names as compounds of two units; (2) names formed by contraction, as Devaka for Devadatta; and (3) names derived from stars (nakshatra-nāma), as Svātidatta.

Names which are compound words normally consist of a pūrvapada and an uttarapada (V.3.82), and the compound is either Bahuvrihi or Tatpurusha. Almost all names in this section (V.3.79-83; VI.2.106-115) are polysyllabic (bahvach), i.e. consisting of more than two syllables (urdbvain dvitiyādachah, V.3.83), the actual number of syllables being usually four or five. According to the Grihya Sūtras a name should have a Krit ending, and not a Taddhita. Panini mentions two examples of this, viz. datta and śruta (VI.2.148). To these Patanjali adds rakshita (I.189) and gupta (I.37, e.g. Amragupta, Śālagupta). The above two features of names are ascribed to the Yājnikas by Patanjali (I.4), who must have based themselves on the tradition of the Gribya Sūtras. Besides krit-ending, Pānini mentions Mitra, Ajina (VI.2.165; V.3.82) and Sena (IV.1.152; VIII.3.99) as the second part of personal names.

CONTRACTION—Contraction of names is unknown to Vedic literature, since the Gotra names were not susceptible to abbreviation. Only in the compound names do we find the elision of the uttarapada (V.3.82), or the retention only of its first two syllables (V.3.83). The contraction of a personal name is dictated by affection or endearment (anukampāyām, V.3.76); e.g., Vyāghrājina was simplified to Vyāghraka (V.3.82); and Devadatta to Devika, Deviya, and Devila (V.3.79). It might also be expanded into Devadattaka (V.3.78). In the opinion of the eastern grammarins, Upendradatta was shortened to Upada and Upaka (V.3.80), and to Upiya and Upila, the last being the form which must have been transformed into Upāli, a name so well-known in Buddhist literature.

NAMES DERIVED FROM STARS (NAKSHATRA-

<sup>&</sup>lt;sup>1</sup> For rules about names în the *Gribyasūtras*, see *Hiranyakcši*, ed. Kriste, II.4.10; Āśvalāyana, I.13.5-6; Кāṭbaka, III.10.2; Pāraskara, I.17:2; Āpastamba, VI.15.9; Mānava, I.18.1. (I.H.Q., June, 1938, pp. 224-244, P. V. Kane); and also Gobbila, II.7.15-16; Śāṅkhāyana, I.24; Khādira, II.2.31-32; Bhāradvāja, I.26; Drāhyāyaṇa, II.4.2.

NĀMA)—Pāṇini knows the custom of naming persons after the asterism of their birth (IV.3.34;37; VIII.3.100); e.g., Tishya (a boy born under Tishya); Punarvasu (a boy born under Punarvasu, IV,3,34.¹ Such Nakshatra names are practically unknown in the entire Vedic literature (except perhaps Chitra and Ashāḍha, which also may be differently interpreted.² This class of names is post-Vedic and constitutes a chronological landmark in social history separating the age of the Sūtras from that of the Brāhmaṇas.

The Gribyasūtras show the earliest use of such names. According to Apastamba, the nakshatra name is the sacred name of a person. The Khādira, Vārāha, Hiraṇyakešī and Gobbila Gribyasūtras contain injunctions for giving names based on stars (nakshatrāśraya nāma). These fall in line with Pāṇinian tradition. The use of such names is also found in Pāli literature. The epigraphic records of the Maurya and Śuṅga-Sātavāhana periods also testify to the use of such names for about four centuries.

A detailed analysis of the proper names in use in Pāṇini's time is given below. They fall under three groups, I. Miscellaneous names, II. Star names, and III. Abbreviated names. I. Miscellaneous Names: (1) Names with viśva as the pre-fix (Bahuvrīhau viśvain sainjūāyām, VI.2.106). The pre-Pāṇinian examples are Visvāmātra, Viśvamanas (Jaiminīya Brāhmaṇa), Viśvasāman; and Vissakamma (I.314), Vissasena king of Bārāṇasī (II.345), Vessabhū Buddha, Vessāmitta, a former king (porāṇakarājā) (VI.251), and Vessantara in the Jātakas.

## (2) Names ending in udara, aśva and ishu (Udarāśveshu-

<sup>&</sup>lt;sup>1</sup> Tishyascha māṇavakah Punarvasū cha māṇavakau Tishya-Punarvasavah. Patanjali takes these examples implied in sūlra, 1.2.65 (Bhāshya, I.231).

As Chitra Gângyāyana (Śānkha, Ār. III.1); Ashādha Sāyavasa (Jaiminīya Br.) who was a grāmaņī of the Śārkarākshyas; Āshādhi Saušromateya (Śatapatha Br., VI.2.I.37), son of Ashādha and Sušromatā.

shu, VI.2.107). The names cited in the Kāšikā, viz. Vṛikodara, Haryaśva, Maheshu seem to be pre-Pāṇinian. Allied classical instances are absent except Bahusodarī Devadhitā found in a Jātaka (VI.83).

- (3) Names ending in karna (VI.2.112), as Mayūrakarna (Šivādi-gaņa, IV.1.112), and a few others in the Gana-pātha.
- (4) Names ending in kantha, prīshtha, grīvā and janghā (V.2.114). Such names are rare in Vedic literature, except Śiṭipṛishṭha and Śitikaṇṭha. Pāṇini mentions Kalaśīkaṇṭha, Dāmakaṇṭha, and Khārījaṅgha in the Upakādi group (II.4.69). Tālajaṅgha cited in the Kāšikā was an earlier name. Maṇikaṇṭha occurs in the Jātakas (II.282).
- (5) Names ending in śringa (VI.2.115). Rishyaśringa is the only example in the Buddhist or classical period.
- (6) Names with the instrumental form manasā as prefix (VI.3.4). The Kāśikā cites Manasādatta and Manasāgupta, but there is no instance of their actual use in literature.
- (7) Names ending in mitra (VI.2.165). These were only few in Vedic literature, but are very popular in the post-Pāṇinian period, e.g. Sarvamitta (Jāt. V.13), Jitamitta (Jāt. I.37), Chandamitta (Jāt. I.41), etc. The later epigraphical records<sup>1</sup> show abundant use of mitra-ending names.
- (8) Names ending în ajina (VI.2.165). Kāšikā cites Vrikājina, Kulājina and Krishņājina. In the Jātakas the only examples are Migājina (VI.58) and Kaņhājina (daughter of Vessantara, VI.487). Pāṇini himself refers to Krishņājina in the Upakādi (II.4.69) and Tika-Kitavādi (II.4.68) groups.

<sup>1</sup> The Sanchi inscriptions have Balamitra, Samghamitra (=Saghamita), Ahimitra, Satyamitra (=Sachamita) among males, and Nāgamitrā, Uttaramitrā, Vasumitrā, Rishimitrā (=Isimitā), Jitamitā, and simply Mitrā, among females (Bühler's List of Proper Names from Sanchi Ins., Ep. Ind., Vol. II, pp. 403-407); Bharbut adds Sanghamitra and Gargamitra (Lūders List, Nos. 759, 832); the Panchāla coins give, Brihaspatimitra, Agnimitra, Bhānumitra, Bhūnumitra, Dhruvamitra, Phālgunīmitra, Sūryamitra, Vishņumitra (Allan, Indian Coins, p. cxvii); also Prajāpatimitra (JNSI., III.1.1).

The paucity of ajinānta names in literature may be due to the elision of ajina as noted by Pāṇini: Ajināntasy-ottarapada-lopascha, V.3.82. For example, Vyaghrājina was contracted to Vyāghraka.

(9) Names of species (jāti-nāma) adopted as personal names (manushya-nāma, V.3.81), e.g. Vyāghaka, Simhaka. Besides the suffix ka, the other forms were Vyāghrila, Simhila (Bühler's Sanchi List). This custom of deriving names from animals was unknown in the Vedic period. Pāṇini makes reference to the contemporary ideals of personal bravery in instituting comparisons with the strength of a tiger or a lion (Upamitam vyāghrādibbih sāmānyāprayoge, II.1.56).

(10) Names ending in sena (VIII.3.99). Păṇini refers to senanta names in sutra, IV.1.152 (Senanta-lakshanakāribbyascha). Famous examples of such names in the lists of Vedic teachers are Yājñasena (Taitt. S. V.38.1; Kāthaka. S. XXI.4) or Yājñasena¹ and Rishtishena (Nirukta, II.11); Patanjali adds Jātasena as the name of a Rishi. As ancient examples of such names among Kshattriyas, Patañjali points out Ugrasena Andhaka, Vishvaksena Vrishni and Bhīmasena Kuru. They become common in the post-Pāninian times, e.g. Vārishena and Harishena in Patañjali (loc. cit.); Sorthisena (Jat. V.88, Skr. Svastisena), Sūrasena (Jāt. VI.280), Ugrasena (Uggasena king of Banaras, IV.458), Upasena (Jat. II.449), Atthisena (Iāt, III.352), Nandisena (minister of Assakarāja, Jāt. III.3), Javasena (Jat. Nidāna, p. 41), Chandasena (Jāt. VI.157) and Bhaddasena (Iāt. VI.134) in the Jātakas. Also Dhamasena, Varasena at Sanchi; Nagasena (Lüder's List, 719), Mahendasena (Lüder's List, 850) at Bharhut; and Asadasena from Pabhosa.

As shown by Pāṇini (VIII.3.100) some personal names were formed by prefixing names of stars to the ending sena, e.g. Rohiṇisena, Bharaṇisena, etc., and Śatabhishaksena, a name

Descendant of Yajñasena also called Sikhandin, Kaush. Br., VII.4. In a list compiled from the Jaiminiya Br., Dr. Caland also gives Sutvan Yajñasena.

although seldom found in actual use, is implied in Pāṇini's rule, VIII,3.100 (agakārād).

- (11) Names ending in datta and śruta, and implying blessing (VI.2.148), e.g. Devadatta, he whom the gods have bestowed,' and Vishnuśruta 'he whose wishes Vishnu may hear.' These are examples of names ending in a Krit suffix of which we hear so often in the Gribyasūtras. We do not usually come across any real name ending in sruta in the Vedic or Buddhist literature. The number of names ending in datta is also limited, as Brahmadatta (Jaim. Br., king of Kośala, also called Prāsenajita), Punardatta and Sūryadatta (Šānkb. Ār. VIII.8); but in Buddhist literature they are more common, as Devadatta, Bhūridatta (Jāt. VI.167), Matidatta (Jāt. IV.342), Yañnadatta Brāhmanakumāra (Jāt. IV.30), Somadatta (Jāt. VI.170). These become a regular feature in the post-Pāninian period, e.g. Aggidatta, Vāyu-, Yama-, Id-(=Indra-), Rishi- (=Isi-), Brahma- (=Baha-), Upendra- (=Upida- or Upeda-), Uttara-, Vaisramaņa-, Pushya-, Ganga-, Dharma- and Nāgadatta, etc., (Cf. Bühler's Sanchi List). According to Kātyāyana (I.4,58-59), Maruddata would be equal to Marutta (Bhāshya, I.341). Patañjali cites Yajñadatta and Devadatta as typical names of Brāhmanas (Bhāshya, I.1.3; I.189), often shortened simply to Datta (I.1.45; I.111).
- (12) Śevala, Supari, Višāla, Varuņa and Aryamā (Śevala-Supari-Višāla-Varuņ-Āryamādīnām tritīyāt, V.3.84)—these formed the first part (pūrvapada) of names and the three endearment suffixes, ika, iya and ila, added after them caused the elision of all the syllables after the third. For example, Śevaladatta or Śevalendradatta was shortened to Śevalika. Śevaliya or Śevalila; Suparyāšīrdatta to Suparika, Supariya and Suparila; and Višāladatta to Višālika, Višāliya and Višālila.

In the Jātakas the equivalent of Sevala is Sīvalikumāra (I.408), or the feminine Sīvalīdevī, wife of king Mahā-Janaka (VI.37). The form Devī Sivalā occurs at Bharhut in the name of this Jātaka (Lüder's List, No. 709).

The names in this sūtra seem to refer to minor deities who were propitiated to grant the boon of a son, to be named after them. Most probably these were names of Yakshas. Viśāla is definitely a yaksha named in the assembly of Kubera (Sabhāparva, 10.16). Sevala, who gives seva or treasure, also seems to be a yaksha. Sevalendra would then denote, Kubera (lord of Sevala), and a child born by propitiating him was called Sevalendradatta, or by the shortened names Sevalika, etc. Even Vedic gods were worshipped as yakshas in folk religion. According to the Atanativa Sutta (Dighanikaya, 32) Indra and Varuna are both yakshas like Manibhadra. Aryamā was closely related with child-birth and invoked for easy delivery (Atharva. I.11.1). A child would thus be named after him, but the use of the name is rare, only one instance being recorded at Bharhut as Ayama (Lüder's List, No. 813). Varuna was also the name of a Lokapāla and of a Nāgarāja. Its use is frequent in the Kumbha Jātaka (V.12). Kātyāyana's vārttika on this sūtra begins with Varuna, not Sevala. It hows that the sūtra formed part of an earlier grammar from which Panini borrowed and recast it by adding three names of tutelary deities famous in his days viz. Śevala, Supari and Viśāla. But Kātvāyana retained for purpose of reference in his varttika the original form of the sūtra as it began with Varuna.

- (13) Names like Gosāla, Kharasāla (Sthānānta-gosālakharasālāchcha, IV.3.35), Vātsasāla or Vatsasāla (IV.3.36) are derived from places of birth. Gosāla is a historical example, also called Mankhali, which corresponds to Pāṇini's Maskarī (VI.1.154). As a popular name it occurs at Bharhut (Lüders' List, No. 853).
- (14) Names ending in putra, and preceded by a masculine word (Putrah pumbhyah, VI.2.132), as Kaunatiputra. They have an initial acute accent (ādy-udātta). As counter-examples, were names preceded by the name of the mother, as Gărgiputra and Vătsiputra, and distinguished by the acute accent on the final vowel. The practice of adding the mother's

name to putra is found in the Vamisa list of teachers in the Satapatha Brāhmaṇa beginning with Sānjīvī-putra (Vedic Index, II.443; Br. U., VI.5). A Kātyāyanī-putra (Jātū-karṇya) and a Prātiyodhī-putra also occur in the Sānkh. Āraṇyaka (III.10; VII.13). It shows that such names formed part of a well recognised practice considered honourable. According to Pāṇini, one's designation after the gotra name of one's mother (gotra-strī) implied censure (IV.1.147), because it was supposed that the mother's name would be adopted only in the event of the father's name being unknown (Kāšikā, Pitur-asanīvijnāne matrā vyapadeśo' patyasya kutsā). But there seems to have been a change later on and Patañjali states that there is honour in being addressed by the mother's name, as Gārgīmāta, Vātsīmāta (Bhāshya, VII.3.107; III.340 mātrī-nām mātach putrārtham arbate).

Female names are regulated in sūtra, IV.1.113, on which the Kāšikā cites Šikshitā and Chintitā. This rule also refers to women named after rivers, and also to their apatya or descendants, e.g. Yāmuna, son of Yamunā. The Vārāha Gribyasūtra states that a girl should not be named after a river, and this form of naming is not approved by Manu (III.9) also.

II. Nakshatra-Nāma: (15) Pāṇini deals at length with names derived from stars (IV.3.34;36,37; VIII.3.100). The Grihya-sūtras refers to the nakshatra name in addition to the personal name. According to Apastamba the star name was kept a secret; Gobhila enjoins that the teacher was to give his pupil a nakshatra name which he used in bowing to him (abhivādanīya nāma, Gobhila Grihya, II.10.23-24). The Grihyasūtras of Sānkhāyana, Khādīra, Mānava and Hiranyakešī are also of the same opinion. Originally adopted as a secret name, the nakshatra name as being convenient to utter became later on as popular as the gotra name, e.g. Moggallāna Tissa in which the star name and the Gotra name are coupled.

Birth under a particular asterism (Tatra jātaḥ, IV.3.25) inspired such names. In Pāṇini's time stars were regarded as

deities to whom regular worship (bhakti) was shown. Assuch the star names are indicative of the religious attitude of the people based on a belief in numerous tutelary deities, including those presiding over the several asterisms.

In star names the suffixes are often dropped (IV.3.37), e.g. Rohina from Rohini. Persons, both male and female, were named after Śravishthā (=Dhanishthā), Phālgunī, Anurādhā, Svāti, Tishya, Punarvasu, Hasta, Višākhā, Ashādhā and Bahulā (i.e. Krittikā) without adding any suffix, i.e. the star name was synonymous with the personal name, e.g. Śravishthah, Phalgunah, etc. From Abhijit, Aśvayuk and Satabhishak the terminations were optionally dropped (IV.3.36), e.g. Abhijit and Abhijita, etc.

As stated above the star names are unknown in Vedic literature, but became popular in the time of Pāṇini and later. For example, Visākhā, Punabbasu, Chittā, Potthapāda, Phaggunī, Phussa and Tissa or Upatissa occur in the Jātakas; to which may be added Phaguna, Phagula, Tisaka, Upasijha (=Upasiddhya), Sijhā, Pusa, Pusaka, Pusinī, Bahula (cf. Pānini's Bahula), Sātila (=Svātigupta, or -datta). Asādha, Mūla, Pothaka, Pothadevā (=Proshthadevī), Rohinī or Rohā, etc., from Sanchi; and Bharanideva, Anuradha and Sona (=Sravana) from Bharhut (Lüders' List, 784, 874).

- III. Abbreviated Names: (16) Names ending in ika (V.3.78). A polysyllabic name was shortened in order to express affection. Only the first two syllables were retained with a suffix added, e.g. Devika from Devadatta; Yajñika from Yajnadatta; Chhadika at Sanchi from Chhandodatta (List. 380); and Yasika from Yasodatta (List. 757).
- (17) Names with iya suffix (=ghan, V.3.79) added as before, e.g. Deviya and Yajñiya. The Jātakas add Giriya (III. 322), Chandiya (=Chandakumāra, VI.137), Nandiya (II.199; same as Nandika, II.200, or Nandaka), Bhaddiya (=Bhadrasena, Bhadrakāra or Bhadrasāla, I.140; VI.135), Meghiya (=Meghakumāra, IV.95) and Sabhiya (VI.329), but they

are rare in Bharhut and Sanchi inscriptions.

- (18) Names ending in ila (=V.3.79), e.g. Devila from Devadatta, and Yajñila from Yajñadatta. The Jātakas mention Guttila (II.248), Makhila (=Makhadeva, Jāt. Nidānakathā, p. 41); in Sanchi records are found Agila (=Agnidatta), Satila (Svāti-datta), Nāgila (Nāgadatta), Yasila, Yakhila (=Yakshadatta), Samghila, Budhila; and from Bharhut Mahila (L.L.766), Yakhila (846) and Ghatila (L.L.860).
- (19) Names with the prefix upa were shortened in the opinion of Eastern teachers, by adding ada and aka (=vuch) (Prāchām upāder-adaj-vuchau cha, V.3.80), e.g. Upendradatta shortened to Upada and Upaka (in the east) and into Upiya, Upila and Upika according to other teachers (V.3.78-79), together with Upendradattaka.

Upaka occurs as a gotra name in Pāṇini (II.4.69), and Upagu and Upajīva in the Jaiminīya Brābmaņa (Caland 199.249). But such names became more popular after Pāṇini.

The Buddhist name Upāli (I.140) may be from Upila. At Sanchi, however, the name appears in full as Upedadatta, Upidadatta or Opedadatta. Other names with upa, were Upaka, an Ajīvika (Jāt. I.81), Upakamsa (Jāt. IV.79), Upakanchana (Jāt. IV.395) and Upajotiya (Jāt. IV.382).

- (20) Names ending in ka, a suffix added to denote (1) inferiority (kutsite, V.3.75), e.g. Pūrņaka, name of a servant; and (2) benediction (āśisbi, III.1.150), e.g. Jīvaka (May you live!), Nandaka (May you prosper!).
- SHORTENED NAMES IN USE AFTER PĀŅINI—Kātyāyana and Patañjali record in the following rules and suffixes post-Pāṇinian tendencies to form abbreviated names of later times:
- (a) Retaining the first four syllables, against two in Pāṇini (V.3.83), e.g. Bṛihaspatika from Bṛihaspatidatta, Pra-jāpatika from Prajāpatidatta. Pajaka (Jātaka, III.463) derived from Prajaka (==Prajāpatidatta) follows Pāṇini's rule.

- (b) Adding ka suffix for Pāṇini's ika (No. 16 above); e.g. Devaka and Yajñaka for Devadatta and Yajñadatta; also Pahaka (Jāt. I.40, Prabhākara) Sonaka (V.247, Śoṇananda), Sachchaka (VI.478, Satyayajña) in the Jātakas, and Balaka (for Baladeva, Balarāma, Balamitra), Pusaka, Dhamaka, etc., at Sanchi.
- (c) Adding la for Pāṇini's ila (No. 18 above), after words ending in u, e.g. Bhānula for Bhānudatta: Vasula for Vasudatta; also Bandhula (Senāpati of Kośala, Jat. IV.148) and Rāhula (=Rāhudatta, born under the planet Rāhu).
- (d) Eliding the first part of the name, against Pāṇini's second (uttarapada-lopa) and then adding the same suffixes, Devadatta would give, e.g. Dattika, Dattila, Dattiya, Dattaka; or Devadatta might become Datta, and Deva without any suffix. (Cf. Bbāsbya giving Bhāmā for Satyabhāmā, I.111).

Pāṇini's Senaka (V.4.112), appears to be a Senānta name formed by dropping  $p\bar{u}rvapada$  and adding ka, showing the antiquity of this custom.

Thus the single name Devadatta could appear in eleven forms: (1) Devadattaka, (2) Devika, (3) Devila, (4) Deviya according to Pāṇini; and (5) Devaka, (6) Dattika, (7) Dattila, (8) Dattiya, (9) Dattaka, (10) Deva, (11) Datta according to the later rules in the Bhāshya.

REŚUME—The following features of names in Pāṇini's time thus stand out: (1) The use of a personal name as distinct from a gotra name. A man was asked both his nāma and gotra (Jāt. VI.243, nāma-gottañ cha puchchhi); cf. also Virāṭa asking Yudhishṭhira his gotra and nāma (Virāṭaparva, 7.11). The Bhikkhus who took pabbajjā retained their personal names as well as gotras (nānānāma, nānāgotta, Vinayapiṭaka, B. C. Law, Pāli Lit. I. xiii).

- (2) Some names typical in Pāṇini but rare in Vedic literature had the endings mitra, sena, datta, śruta, karna, śringa, or were prefixed by upa.
  - (3) Personal names after stars unknown in Vedic litera-

ture are numerous in Pāṇini, Gṛihyasūtras and Pāli literature. The Baudhāyana Gṛihyaseshasūtra giving a list of star names offers the closest parallel to Pāṇini (Ashṭ. IV.3.34-37; Baud. I.11.9-18).

(4) The shortening of names, unknown in the Vedic literature, and passed over in silence in the Grihyasūtras, was popular in the time of Pāṇini and the Buddhist literature. Pāṇini knows of it as a practice well-established both in time and over a wide area including eastern India (V.3.80).

#### CHAPTER IV

#### ECONOMIC CONDITIONS

VRITTI (Economy) — The science of economics later known as Vārttā may be connected with the word Vritti, or economic pursuits, such as krishi (agriculture), vāṇijya (trade and commerce) and pāsupālya (cattle-rearing), about which Pāṇini furnishes interesting particulars. Pāṇini uses the general term jānapadī vritti (IV.1.42) to indicate the economic pursuits followed in a region or State. The term jānapadī was older than Pāṇini and is referred to by Yāska in the expression Jānapadīshu vidyātah purūsha-višesho bhavati, 'One gains celebrity by proficiency in the economic pursuits of the Janapada State' (Nirukta, I.16).

### 1. AGRICULTURE

KRISHI (AGRICULTURE)—Pāṇini mentions agriculture as kṛishi, derived from the root kṛish, to plough, although the term was not restricted to mere ploughing. Kātyāyana and Patañjali have an interesting discussion that kṛishi denotes not merely ploughing, but includes collectively all other operations of agriculture, such as the supply of seeds, implements, animals, and human labour.<sup>1</sup>

Pāṇini refers to cultivators tilling the soil, to officers measuring the fields (kshetrakara), to agricultural implements as bala and bali, and to the various processes of agriculture, ploughing (halayati, III.1.21; III.1.117; III.2.183; V.4.58; V.4.121; IV.4.81; IV.4.97), sowing (vāþa, IV.3.44; V.1.45), weeding (mūlābarbaṇa, IV.4.88), harvesting (lavana, VI.

<sup>&</sup>lt;sup>1</sup> Nānākriyāh krisber-arthāh, nāvasyam krisbir-vilekbane eva vartate, kim tarhi? Pratīvidhāne'bi vartate yad asau bhakta-bijahalivardaih pratīvidhānam karoti sa krisby-arthah (Bhāshya, III.1.26; II.33).

1.140), threshing (khala, IV.2.50,51) and winnowing (nish-

pāva, III.3.28).

CULTIVATORS—Pāṇini calls the husbandmen kṛishīvala (Rajaḥ kṛishyāsuti-þarishado valach, V.2.112), a new word which had replaced the older Vedic term kṛishṭi, denoting people in general, as the most numerous class amongst them was the agriculturists (Vedic Index, I.183). Kīnāśa, another Vedic term (Rīgveda IV.57.8; Vedic Index, I.159) for the tiller of the soil, is only referred to in a later Unādi-sūṭra (kli-śerīch-chopadhāyāḥ kan lopaś-cha lo nām cha, V.56).

In the post-Brāhmanical period the older word krishii must have been replaced by the more expressive krishivala, 'one following agriculture as his profession,' formed by adding to krishi the new suffix vala.

LAND AND FIELDS—A village included cultivated and uncultivated land. The land which was not under the plough included *ūshara* (wasteland, V.2.107), gochara, pastures (III. 3.119), including cattle-ranches (vraja, III.3.119), and cattle-

pens (goshtha, V.2.18).

The cultivated land was divided into separate holdings known as kshetra (Dhānyānām bhavane kshetre khañ, V.2.1). The distribution of plots implied some kind of cadastral survey of which Pāṇini gives indication when he refers to the measuring of fields in terms of the kānda measure. Almost synonymous with kshetra was kedāra (IV.2.40) which word is unknown in the earlier Brahmanical literature. But the Arthasāstra understands kedāra in the sense of a wet-field, and possibly it was distinguished from kshetra in this special sense. A collection of adjoining wet fields was known as kaidarya or kaidāraka. Other areas used as barn (khala, IV.2.50) were close to one another in a group called khalini (IV.2.51) or kbalyā (IV.2.50). The general word for arable land was karsha (IV.4.97), but the area actually brought under the plough was called balya (IV.4.97) and sitya (IV.4.91). Halya was the unit of land cultivated with one plough, as

may be inferred from the examples dvi-halya and tri-halya cited in the Kāšikā (IV.4.97). Patañjali distinguishes a bigger unit of land measure called parama-halyā, in excess of the normal unit halyā, and similarly parama-sītya of sītya (Bhāshya, I.1.72; I.186).)

The word sītā (IV.4.91) is as old as the Rigueda (IV. 57.6-7, and is used in the later Samhitās also, where it variously represents the personified deity of agriculture and also furrow. Gradually the former sense fell into disuse. In the Artha-sāstra sītā retains its older meaning of the goddess of agriculture only in one place and there also it appears to be in an old quotation: Sītā me ridbyatām devī bījeshu cha dhaneshu cha (Arth. Text, II.24). Its more common sense in Kauţilya is agricultural produce, specially from the crown lands. Whatever in the shape of agricultural produce is brought in by the Superintendent of Agriculture (of crown lands) is termed sītā' (Arth. II.15, p. 93; also p. 60).

In the Ashṭādhyāyi sītā has no such technical meaning. It means furrow described by a plough, and sītya denotes a field brought under the plough (sītayā samitam sangatam, kshetram sītyam, IV.4.91).

In the chapter Sāsya devatā (IV.2.24-33) Pāṇini mentions the Vedic deities of agriculture, Suna and Sīra (IV.2.32). According to Yāska these represented Vāyu and Āditya, but according to others 'the share and the plough,' (Vedic Index, II.386). Oblations to these agricultural deities were known in the time of Pāṇini.

MEASUREMENT AND SURVEY—The distribution of plots among individual peasants must have depended on some kind of land survey which took note of the area and boundaries of fields. Pāṇini gives an indication of this when he prescribes the rule for expressing the area of a field in terms of a measure known as kāṇḍa. The sūtra Kāṇḍāntāt kshetre (IV.1.23) states that the word kāṇḍa preceded by a numeral takes the feminine affix tāp, if the derivative word relates to a field. The

word denoting the area of a cultivated field (kshetra-bhakti) must have been the object of the present sutra. The Kāsikā cites dvi-kānda to denote a field measuring two kāndas. Similarly, tri-kānda etc. with other numerals. Kānda is later interpreted as 16 cubits (shodaś-āratny-āyāmo dandah kāndam; Bālamanoramā). Thus 1 sq. kānda=24×24 sq. ft. KSHETRAKARA (III.2.21), 'maker of a field'-This term denoted an officer who divided the cultivable area into plots by survey and measurement. (Megasthenes also refers to officers whose duty was to measure lands for purposes of the assessment of revenue (Frag. 34). They might be the Rajjugrābakas of the Jatakas who measured the land with a rope. He had the rank of an amātya, surveyed the fields and measured them with a rope tied to pegs, of which one end was held by him and the other by the owner of the field (Kurudhamna Jat., III.276). The balya measure of land is explained by Pāṇini as balasya karshab, i.e. the area cultivated by one plough (IV. 4.97). Multiples of the halya land measure were expressed as dvi-balya, tri-balya.) Manu refers to a measure of land called kula equivalent to two plough-lands (Manu, VII.119, Kullūka), same as dobalikā of land-grants.

CLASSIFICATION OF FIELDS—Pāṇini classifies fields, firstly on the basis of the crop grown (V.2.1-4), and secondly in terms of the quantities of seed required for their sowing (V.1.45-46).

As examples of fields named after the crops grown (Dhānyānāin bhavane kshetre khañ, V.2.1), we have: vraiheya for vrīhi, śāleya for śāli (V.2.2). Other similar names were yavya for barley, yavakya for a kind of rice, shashṭikya for the shashṭikā rice so called from its ripening in two months, tilya or tailīna for sesamum, māshya or māshīṇa for beans, umya or aumīna for linseed, bhangya or bhāngīna for hemp, and aṇavya or āṇavīna field for the aṇu crop (Panicum Miliaceum, now called chīnā, V.2.3-4).

The size of a field is also indicated by the quantity of seed required for its sowing (Tasya vāpaḥ, V.1.45), e.g. a

field sown with a prastha measure of seed was called prāsthika; similarly drauņika and khārīka. Pāṇini refers to pātrika as a field requiring a pātra measure of seed (V.1.46, pātrasya vāpaḥ).

The fields were also called after the crops for which they were suitable (*Tasmai hitam*, V.1.5), e.g. fields for barley called yavya, for beans māshya, and for sesamum tilya (V.1.7).

AGRICULTURAL IMPLEMENTS—The plough is named (sīra-nāma, VI.2.187) in several sūtras as bala (III.2.183; IV.3.124; IV.4.81; VI.3.83). Lāṅgala, a plough in the Rigveda and later (Vedic Index, II.231), was one of the synonyms of sīra referred to in sūtra, VI.2.187. A large plough was called bali (III.1.117), which was also known as jitya, perhaps from its utility to break even the hardest ground and to reclaim waste land. (III.1.117). The two words bali and jitya are still preserved in the Avadhī dialect where reciprocal assistance in tillage is called barī or jīta (Patrick Carnegie, Kachabri Technicalities, Allahabad (1877), p. 14). This implied the lending of one's plough and bullocks to one's neighbour.

Pāṇini mentions three classes of farmers: (1) not possessing a plough of their own (abali, also called apabala, apasīra, or apalāngala, VI.2.187); (2) having a good plough (subalaḥ, subaliḥ); and (3) with a bad plough (durbali or durbala, V.4.121).

Kātyāyana considers the plough as a mark of prosperity in the benedictory formula 'Svasti bhavate sahahalāya or sahalāya', 'May you have good luck with your plough!'

The plough was made up of three parts: (1) the long wooden pole (*īshā*), (2) the central bent portion called *potra* (III.2.183), and (3) the plough-share or *kušī* fitted in the *potra* and made of iron (*ayovikāra*, IV.1.42). In Vedic

t Kātyāyana is more explicit and mentions längala in a vārttika on III. 2.9 (Bhāthya, II.99, lāngala-graha).

literature the share was called phāla (Vedic Index, II.58; Rig. IV.57-58). The plough was drawn by bullocks (IV.4.81) called bālika or sairika, as distinguished from others for drawing carts and chariots (IV.4.76; IV.4.80). They were fastened to the yoke (yuga) by a rope called yotra or yoktra (III.2.182), or leathern thongs called naddhri (III.2.182). In the Khandikādi' group we have yuga and varatrā, which refer to the yoke and the thick long rope used for lifting water from a well, still called barat in western and barra in eastern Hindi. The whip was called vyaja (III.3.119) and totra (III.2.182); the spade khanitra (III.2.184) and ākhana or ākhāna (III.3. 125); the hoe for uprooting weeds and stumps stambaghna (III.3.83). The ripe grain was cut with a sickle for which besides the old Vedic word datra (III.2.182) a new word lavitra (III.2.184) had come into use. Yaska (Nir. II.2.) says that the sickle was called datra in the North, and datra in the East. Patanjali repeats this information.

AGRICULTURAL OPERATIONS—The operations of agriculture are neatly summed up in the Śatapatha Brāhmaṇa (I.6.1.3), as ploughing, sowing, reaping and threshing (krishantah, vapantah, lunantah, mṛiṇantah). In the Ashtādhyāyī all these are distinctly mentioned.

(i) Ploughing (karsha). The ploughed land was called halya (IV.4.97). Ploughing is referred to by the new term halayati, 'he holds the plough' (III.1.21)." (We learn from Patañjali that agricultural labour was employed for ploughing. It enabled the owner of the land to sit in a corner and supervise the ploughing done by five hired labourers

<sup>&</sup>lt;sup>1</sup> The Khandikādi group (IV.2.45) is one of those ganas which had been subjected to a searching analysis by Patañjali (II.280) and all subsequent commentators, and hence its text may be considered reliable.

<sup>&</sup>lt;sup>2</sup> Dătir lavanărthe Prăchyeshu, dătram Udîchyeshu (Nir. II.2;; Ebăshya, I.9).

<sup>&</sup>lt;sup>a</sup> Munda. . . . . bala-kala-krita-tūstebbyah nich, III.1.21. According to Kātyāyana bala is the substitute for the original bali (See Bhāshya, II.28).

(ekānte tūshņīm-āsīna uchyate pañchabbir-halaiḥ kṛishatīti, tatra bhavitvyam pañchabbir-halaiḥ karshayatīti, Bhāshya, II.33). The labourers received bhakta or food in lieu of wages. This food was supplied at the time required.

The Greeks in India were struck with the amazing fertility of the soil (Meg. Frag.I) and the skill of the agriculturists (Arr. Anab. V.6). Pāṇini knows of deep ploughing. It was effected by driving the plough twice (dvitīyā-karoti), or thrice (tritīyā-karoti, V.4.58). The Arthasastra also (II.24, p. 116) refers to ploughing three times (trîn karshakān) in heavy rains. Pāṇini also refers to ploughings done more than three times (Samkhyāyāś-cha guṇāntāyāḥ, V.4.59). To make cultivation more fruitful and intensive it was the custom to plough the same field over again from one end to the other in a reverse direction (śambā-karoti, V.4.58; anulomakṛishṭamkshetram punaḥ pratilomam kṛishat-īty-arthaḥ). The Greeks testify to the careful ploughing habits of the people in this country (Meg. Frag. I).

(ii) Sowing (vāpa). After the soil was prepared by ploughing, it was fit to be sown (vāpya, III.1.126). In some cases ploughing was done in a field with seed already scattered in it, e.g. bījākaroti (V.4.58), which the Kāšikā explains as saba bījena vilekhanam karoti.

The sowing of mixed crops was also known, specially during the rainy season. Pataňjali states that sesamum was sown with beans, but in such combining beans predominated as the main crop and sesamum was subsidiary, so that the ploughing was done according to the requirements of the main crop. The seeds of the minor crop were scattered at sowing (Bhāshya on VIII.4.13). The trend of Pataňjali's discussion is that the mixing of tila with māsha is not obligatory for good germination, for if it were so, then both the crops would have to be considered as principal crops. Only when one is the principal (pradhāna) as māsha, and the other secondary as tila (in this case), can the sentence tilaih saha māshān vaḥati be an

appropriate example of sūtra II.3.19, Sahayukte apradhāne (Bhāshya on II.3.19).

Farming is an operation vitally connected with Mother Earth and the farmers naturally attached great religious significance to the actual sowing of seed, for which purpose they selected auspicious days. Pāṇini tells us that one of the auspicious days for sowing was the full-moon day of the month of Agrahāyaṇa (Āśvayujī Paurṇamāsī, IV.3.45). The Śarat-pūrṇimā is the brightest and clearest moonlit night in the whole year and is still considered auspicious for operations connected with agriculture and plantation.

- (iii) Reaping (lavana, VI.1.140). The ripe grain was cut by a sickle (datra or lavitra, III.2.182; 184). The operation of mowing was called abbilava (III.3.28, Nirabbyoh pūlvob). In the present day dialects it is called simply lāva; at the time of lava there is much buzzing activity in the fields and extra labour is engaged. The mowers were known as lavakāh (III.1.149). Pāṇini also refers to a special method of harvesting (VI.1.140, Kiratau lavane) expressed by the verb upaskirati, which refers to reaping, not from one end of the field to the other, but in an unsystematic manner. We learn from the Kāšikā that such a practice prevailed in the countries of Madra and Kashmir (Upaskāram Madrakā lunanti; upaskāram Kāsmīrakā lunanti). Some cereals such as māsha and mudga cannot be harvested without uprooting the whole plant and were called mülyäh (IV.4.88, Mülamasy-ābarhi). The stumps were weeded by a special kind of hoe called stambaghna (III.3.83).
- (iv) Threshing (nishpāva, III.3.28). The reaped crop was stacked on a threshing floor (khala). A plot was set apart for purposes of threshing, and was called khalya, 'good as a threshing floor' (V.1.7). A group of adjoining threshing floors was called khalyā, (IV.2.50) or khalini (IV.2.51).

<sup>&</sup>lt;sup>1</sup> The grain which had so much ripened as to require immediate reaping would be called lavya (Cf. Kāiikā on III.1.125).

Kautilya prescribes clustered siting of threshing floors for the purpose of safety: 'The threshing floors of different fields shall be situated close to each other.' (Arth. II.24).

Winnowing was done by scattering corn (utkāra or nikāra from krī dbānye, III.3.30) with a winnowing fan (śūrpa, V.1.26) in the direction of the wind, and separating grain from chaff (nishpāva, III.3.28).

The stages as they followed in order of time in the process of harvesting are indicated by appropriate terms as given below:1

- lũyamāna-yavam, when barley was being harvested (as explained by Vardhamāna in the Ganaratnamabodadbi);
- 2. lūna-yavam, when the harvesting was completed;
- pūyamāna-yavam, when barley was being winnowed;
- 4. pūta-yavam, when the winnowing was completed;
- khale-yavam, when barley grain was heaped on the threshing floor;
- 6. khale-busam, when the straw was separated from the grain and heaped on the floor;
- Sāmbriyamāņa-yavam, when barley was being collected;
  - 8. sambrita-yavam, when it was garnered;
  - 9. sambriyamāṇa-busam, when the straw was being collected;
- 10. sambrita-busam, when the straw was gathered in.

Kautilya also directs that grains and other crops shall be collected as often as they are harvested. No wise man shall leave anything in the fields, not even straw (Arth.II.24). That

The ten words in this list form part of the Tishthadgn group (II.1.17): Kātyāyana's vārttika on it, khaleyavadini prathamāntāni anya-padārthe, and Patañjali's comments on the same (Bhā:bya, I.381) show that the words were read by Pāṇini himself,

the above terms refer to the barley crop is suggestive of the place of their origin being the Punjab where barley was one of

the staple crops.

(IV.3.48), i.e. the loan to be repaid when the straw of barley would be available. Patañjali refers to bumper harvests of barley and rice (Eko vrīhih sampannah subhiksham karoti; eko yavah sampannah subhiksham karoti, Bhāshya, I.230). He also points out that barley was the staple crop of Ušīnara and Madra (Udīchya or Punjab), as rice was of Magadha (Ušīnarāvan-Madreshu yavāh, Bhāshya, I.147; tān eva šālīn bhuñjmahe ye Magadheshu, I.19). Barley was so important a crop that its cultivation was guarded by special officers mentioned by Pāṇini as yavapāla (Go-tanti-yavam pāle, VI.2.78).1

(IV.3.26; VI.3.14) and varshā (IV.3.18), the former was the first part of the season (Hopkins, Epic Chronology, J.A.O.S., 1903, p. 26). These two parts were known as purva-varshā and apara-varshā (Avayavād-ritoḥ, VII.3.11). He also refers to varsha-pramāṇa (III.4.32), measurement of rain-fall, of which goshpada is mentioned as the measure of lowest rain-fall (VI.1.145). Kautilya speaks of the quantity of rain (varsha-pramāṇa) in Jāngala and other parts of the country. Failure of rain or drought (varsha-pratibandha) is referred to as avagraha² (III.3.51). Pāṇini mentions two crops in the year as vāsantaka (vernal) and āśvaynjaka (autumnal) (IV.3.45; 46). Megasthenes also noticed that India had a double rain-fall and a double crop every year.

<sup>2</sup> Besides avagraba known to Pāṇini, Patañjali mentions other pests to crops from swarms of mice, locusts and hawks (ākhūttha, šalabhottha, šyenottha, III.2.4; II.98).

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<sup>&</sup>lt;sup>1</sup> Patañjali refers to danger to barley crop from herds of deer: Na cha mrigah santīti favā nopyante (Bhāshya, I.100). This proverb with that of the Sthāli and Bhikshus is quoted in the Kāmasūtra under the name of Vātsyāyana.

IRRIGATION—Pāṇini refers to many important rivers as the Sindhu, Suvāstu (IV.2.77), Varņu (IV.2.103), Sarayū (VI.4.174), Vipāś (IV.2.74), Chandrabhāgā (IV.1.45), which served as sources of irrigation. He also refers to Devikā (VII.3.1) the banks of which were specially suitable for growing paddy crops as pointed out by Patañjali (Dāvikā-kūlāḥ śālayaḥ, Bhāshya, III.316). Pāṇini also refers to the melting of snow in the hills as himaśratha (VI.4.29) and glaciers as himānī (IV.1.49). Irrigation with water from the wells was also known, as indicated by the word udañchana (III.3.123), the large leathern bucket used for lifting water, and also yugavaratrā, 'the yoke and the rope by which the bullocks were driven for raising the water (Gana-pāṭha to IV.2.45).

Patañjali speaks of canals for irrigating paddy fields (śālyartham kulyāḥ praṇīyante, Bhāshya, I.1.24; I.82).)

CROPS—Crops were of two varieties, (1) krishṭa-pachya (III.1.114), grown by cultivation, and (2) a-krishṭa-pachya, naturally growing in the jungles as the nīvāra rice. They are further classified according to the time of sowing (IV.3.44; 46) and the ripening of crops sown (pachyamāna, IV.3.43).

According to the time of sowing (upte cha, IV.3.44) there were three crops, (1) sown on the full-moon day of the month Aśvayuja or Aśvina (Sept.-Oct.), called āśvayyujaka (Āśvayujyā vuñ, IV.3.45); (2) sown in summer, called graishma or graishmaka; and (3) sown in spring and named vāsanta or vāsantaka (Grīshma-vasantād-anyatarasyām, IV.3.46).

The asvayujaka crops are chiefly barely and wheat which ripen in spring. The crops sown in spring ripen in the rains, and those sown in summer ripen in autumn or the month of Mārgaśīrsha.

Kauțilya also refers to the succession of crops from season to season, e.g. vārshika sasya (rainy crops) followed by haimana mushți (autumnal harvest) in Mārgaśīrsha (November-December); haimana sasya (autumnal crop) followed by vāsantika mushți (spring harvest) in Chaitra (March-April);

and finally vāsantika sasya (spring crop) followed by vārshika mushṭi (rains harvest) in Jyeshṭha (May-June). Sasya (crop) is the same as vāpa (sowing) and mushṭi (harvest) as pachyamāna (ripening) of Pāṇini. The evidence from these two sources may be thus tabulated:

(sasya) in Kauti- lya according to sowing season	2. Name of pro- duce (mushti) in Kautilya accord- ing to ripening or harvesting sea- son (pachyamāna)		4. Corresponding names in Pāṇini for the crops according to the time of sowing (upte cha)	
1. Värshika	Haimana	Märgašīrsha	1. Graishma and Grai- shmaka (IV.3.46)	
2. Haimana	Väsantika	Chaitra	<ol> <li>Ašvayujaka (IV.3.</li> <li>45).</li> </ol>	
3. Väsantika	Värshika	Jyeshtha and Müla	3. Väsanta and väsant- aka (IV.3.46).	

Columns 1 and 4 are similar with the exception of Pāṇini's summer crop (graishma) for which there is rainy crop (vārshika) in Kauṭilya. Although the Arthaśāstra also knows of graishmika crops (Arth. II.24, p. 117), their raising entailed much hard labour for the agriculturists. (Hence Kauṭilya directs that only the king who is in financial trouble and who has exhausted other means of replenishing his exchequer, should prevail upon the peasantry through his collector-general to raise summer crops (Arth. V.2, Tr. p. 271).)

# AGRICULTURAL PRODUCE

1. Cereals (Dhānya) and Pulses. Pāṇini mentions the following food grains and pulses:

Vrībi. Special fields for growing vrībi and śāli are mentioned (Vribi-śālyor-dbak, V.2.2). The sacrificial cake made from rice is called vrībimaya (IV.3.146). One who possessed a stock of rice was known as vrībimān, vrībika or vrībī, all

<sup>&</sup>lt;sup>1</sup> Karmodaka-pramāņena kedāram baimanam graisbmikam vā sasyam stbāpayet, Artb., II.24.

being epithets of a rich man. Bahu-vrīhi, the name of a compound (II.2.23) is synonymous with vrīhimān, i.e., one who has a plentiful stock of vrīhi. According to the Taitt. Samhitā (VII.2.10.2) vrīhi was an autumnal crop (Vedic Index. V.I.182).

The following varieties of rice are mentioned:

- (i) Śāli (V.2.2). It was different from Vrīhi as stated by Kauṭilya also. Vrīhi corresponds to Hindi dhān, and śāli to jaḍahan. Śālī crop was harvested in the cold season, and vrīhi in the rainy season. Vrīhi is a much older word used in the Vājasaneyī Samhitā (XVIII.12) and the Bṛihadāranyaka Upanishad (VI.3.13) as the first of the cultivated grains (grāmya-dhānyas). Patañjali refers to red rice (lohita-śāli, I.403) and irrigation channels for watering the śāli crop.
- (ii) Mahāvrīhi (VI.2.38), a well-known variety of rice in the time of Pāṇini, also mentioned in the Taittirīya Brāhmaņa, III.1.5.2.
- (iii) Hāyana (III.1.148), a kind of vrihi grown by transplanting, popularly called jaḍahan.
- (iv) Shashţikā, ripening in sixty days (Shashţikāḥ shashţirātrena pachyante, V.1.90). According to Kātyayana it was a specific term for rice irrespective of its etymology. Other crops taking sixty days to ripen would not be called by this term. (Shashţike sanijñāgrahanam; also Bhāshya on it II.360). Sānṭhī (Hindi name of Shashtika rice) was best suited to grow in the Punjab, since it does with but little water. It is a coarse rice, the grains of which aggultinate when boiled (Watt's Dictionary of Economic Products, Vol. V, pp. 620-21).
- (v) Nivāra, (Nau vṛi dhānye III. 3. 48), wild or uncultivated variety of rice included under a-kṛishṭa-pachya class.
- 2. Yava (Barley). Fields for growing barley were called yavya (V.1.7). Pāṇini refers to yavānī (IV.1.49), a kind of crude and coarse barley according to Kātyāyana. Yavaka (V.2.3) may be another variety of barley grown in

special fields (yavakya kshetra, V.2.3).

Barley was sown in the beginning of winter, probably on the Āśvayuji Pūrnimā (IV.3.45), considered auspicious for sowing. A ceremonial sowing of barley is still practised in Hindu homes on the first bright day of the month of Āśvayuja, and its young sprouts (yavānkura) are worshipped on the tenth day of the same month. Barley ripens as a vernal crop, and the season of its harvesting is referred to by Pāṇini by about half a dozen names, such as yava-busa (IV.3.48), kbale-yava, lūna-yava, pūta-yava, pūyamāna-yava, sambrita-yava and sambriyamāṇa-yava (II.1.17).

- 3. Mudga (Phaseolus Mungo) (IV.4.25).
- 4. Māsha (Phaseolus Radiatus) (V.1.7, V.2.4).

These two names occur also in the list of the Vājasaneyī Sambitā (XVIII.13). Fields for growing māsha were called māshya and māshīṇa, from which the crop is still called māsīnā. As examples of crops harvested by uprooting, the Kāsikā quotes māsha and mudga on sūtra IV.4.88. (mūlyāḥ māshāḥ, mūlyāḥ mudgāḥ). We are told by Watts that in certain districts the crop is cut, in others it is pulled out (Watt's Dictionary, Vol. VI, Pt. I, p. 189). Patañjali says that mudga also takes sixty days to ripen like the shashṭikā rice (Bhāshya, II. 360). He also refers to rājamāsha (rāja-māshebhyo bitam rājamāshyam kshetram, II.345) which is a variety of māsha grown principally in the Punjab.

5. Tila (sesamum). Both in the Vedic literature and Pāṇini tila is mentioned in connection with māsha (V.2.4. and V.1.7 tila-māsha and māsha-tila). Pāṇini does not explicitly mention the two varieties of tila, black and white, but he refers to the use of the same in the śrāddha ceremony (VI. 3.71; IV.2.58) where only the black grains are used. They are known to Patañjali also (kṛishṇatilebhyo bitaḥ kṛishṇatilyaḥ, II.345). Pāṇini knows of the oil extracted from the tila seeds (IV.3.149), but later grammarians thought that there is no derivative sense attaching to the word taila, and

therefore, it should be taken not as a word but as a suffix in such names as sarshapa-taila and inguda-taila (Bhāshya, V.2.97; II.376).

6. Anu (Panicum Miliaceum, V.2.4). A very small grain consumed mostly by poorer people, growing as a rainy crop and mentioned with priyangu in the Yajurveda (XVIII.

13).

7. Kulattha (Dolichos Biflorus, IV.4.4.), horsegram, popularly known as kulathī, is grown specially in the Punjab in the Trigarta region (Hoshiarpur, Ambala, Simla) as an autumnal crop. It is eaten as pulses or groats, but Pāṇini mentions it as a flavouring ingredient (samskāraka dravya, IV.4.4). Like shashṭika, kulattha also occurs for the first time in the Ashṭādhyāyī. Kauṭilya notes it as a crop grown at the end of the rainy season (Arth. II.24).

The Gaṇa-pāṭha of IV.3.136 adds a few more names to the above list of cereals, e.g. masūra (Ervum Hirsutum), godbūma (wheat) and gavedhukā (Coix Barbata, Vedic Index, I.223). According to Kātyāyana gavedhukā formed part of the Bilvādi group (IV.3.136; Bhāshya, II.323).

II. FIBROUS PLANTS—Pāṇini mentions umā (linseed) and bhaingā (hemp) and also the fields named after them (V.2.4). Kauṭilya refers to atasī and śaṇa in place of umā and bhaingā. Pāṇini also mentions cloth made from linen as auma and from wool as aurṇa (Umorṇayor-vā, IV.3.158). For Pāṇini's acquaintance with karpāsa or cotton we have to depend on the reading of the Bilvādi-gaṇa (IV.3.134). He, however, knows tūla (III.1.25) which might have denoted cotton.

Patañjali raises an interesting discussion on sūtra V.2.4 as to whether umā (linseed) and bhangā (hemp) can come under the category of dhānyas or not and sums up by saying that the derivative meaning of dhānya is 'what pleases', and since umā and bhangā are profit-yielding commercial crops which must please the grower they too count as dhānyas. He further observes that the number of dhānyas is seventeen,

a list in which saṇa i.e. bhangā is also included, hence there should be no objection to treating umā and bhangā as dhānyas for purposes of Pāṇini's rules.

III. SUGAR-CANE (IKSHU)—It is mentioned in sūtra VIII.4.5, and the manufacture of guḍa from sugar-cane is implied in rule IV.4. 103 (Guḍādibhyashṭhañ) on which the illustration gauḍika, meaning 'excellent for making guḍa' presumes sugarcane.

IV. KUSTUMBURU (VI.1.143), the spice coriander (Coriandum Sativum). In the South Indian languages the words for coriander bear a closer affinity to Sanskrit kustumburu, e.g. kotamalli (Tamil), kotimiri (Telugu) and kotambari (Kanarese). It seems to have been a loan-word in Sanskrit. V. DYE-STUFFS-Panini refers to manjishtha, madder (VIII.3.97) and nīlī, indigo (IV.1.42). Manjishtha (Indian madder, Rubia Munjista) is also mentioned in the Aitareya (III.2.4.) and Śānkhayāna (VIII.7) Āranyakas. Pāṇini derives mañjishtha from mañji and stha, where manji may mean a cluster of flower blossoms. The permanent dye made from madder has always been highly prized for its deep tinctorial quality. The great part of the madder used in the Punjab is that imported by the Lohani Afghans from the hills of North Baluchistan, Kabul and Khorasan to Multan and Peshawar. (Watt's Dictionary, Vol. VI, pt. I, p. 574).

(Nīlī is according to Kātyāyana the name of the indigo plant. In Pāṇini's time nīla was a kind of cloth (āchchhādana, IV.1.42), dyed with indigo blue. According to McCrindle: "It appears pretty certain that the culture of the indigo plant and the preparation of the drug have been practised in India from a very remote epoch." (Periplus, p. 17). In the post-Vedic language nīla describes the colour of dark blue objects, such as indigo, sapphire, etc. (Vedic Index, II. 246, foot-note). y In Pāṇini the indigo plant as the source of this colour was known and this is the earliest reference to this plant in Sanskrit literature

## CH. IV, SECTION 2. FLORA

The study of Pāṇinian flora furnishes an important chapter in the general history of Indian plants which still remains to be written on the basis of literary and archaeological sources. Pāṇini refers to the systematic cultivation of forests and groves of trees and plants and to early attempts at nomenclature on the basis of their flowers, leaves, fruits and roots. He is acquainted with the principal trees of north India, a good many of which are referred to by him for the first time. FORESTS—Pāṇini uses the term vana in a two-fold sense: (1) natural forests, such as Puragāvaṇa, Miśrakāvaṇa (Misrikh forest in Sitapur district, VIII.4.4); and (2) cultivated groves of trees and fruit-bearing plants, such as āmravaṇa, khadiravaṇa, ikshuvaṇa, which were also used as common names (asamijūāyām api, VIII.4.5). Pāṇini calls a large forest araṇya (IV.1.49) and Kātyāyana araṇyānī (Bhāshya, II.220).

Pāṇini refers to forests classified on the basis of their produce, e.g. (1) oshadhi-vana, tracts producing herbs, as dūrvā-vana, mūrvā-vana, and (2) vanashati-vana, those producing timber trees as sirīshavana and devadāruvana (VIII.4.6).

OSHADHI AND VANASPATI—The plant kingdom is usually classified into two convenient divisions as oshadhi and vanaspati, plants and trees (Vibhāsh-aushadhi-vanaspatibhyaḥ, VIII.4.6). The word vṛiksha is synonymous with vanaspati in sūtra IV. 3.135 (Avayave cha prāny-oshadhi-vṛikshebhyaḥ), with which Kātyāyana agrees (sūtra II.4.12, which prescribes optionally singular number for compounds of tree names, Bhāshya I. 475). Tṛiṇa and dhānya (grasses and cereals) mentioned separately from vṛiksha (II.4.12), must have been included under oshadhi, which in addition to these two comprised other

divisions of annual plants, such as creepers.

Patañjali speaks of a tree as consisting of roots, trunk, fruits and leaves (mūla-skandha-phala-palāšavān, I. 219). Pāṇini mentions all these parts in different sūtras, and in his view the plants were named after the peculiarity of their leaves, flowers, fruits and roots (parṇa, pushpa, phala, and mūla, IV.1.64), e.g. śaṇkhapushpī, (Andropogon aciculatus), a herb with a flower white like conch-shell. He mentions that a fruit was generally named after its tree, without the addition of any suffix (Phale luk, IV.3.163), as āmalaka, fruit of the āmalakā tree.

TREES-The following trees are mentioned in the sūlras:

- 1. Aśvattha (IV.3.48), Ficus religiosa. Pāṇini takes aśvattha to signify the time when these trees bear fruit (yasmin aśvatthāḥ phalanti, Kāśikā).
- 2. Nyagrodha (VII.3.5), Ficus bengalensis. Pāṇini also mentions its other name vaṭa (VI.2.82), a new word unknown in Vedic literature.
- 3. Plaksha (IV.3.164), Ficus infectoria, mentioned in connection with its fruits called plāksha, and its groves called plaksha-vaņa (VIII.4.5).
- 4. Āmra (VIII.4.5), Mangifera indica, with its groves called Āmra-vaņa. This is one of the earliest references to āmra in Sanskrit literature.
- 5. Palāśa (IV.3.141), Butea frondosa. The Palāśādigana mentions seven other trees, e.g. Khadira, Śiniśapā, Syandana, Karīra, Śirīsha, Yavāsa and Vikankata.
- 6. Bilva (IV.3.136), Aegle Marmelos, the wood-apple tree.
- 7. Khadira (VIII.4.5), Acacia catechu. In Pāṇini Khadiravaṇa is both a proper name and also applied to a grove containing catechu trees. As a proper name it is mentioned as the abode of Revata, the foremost of the forest recluses (Khadiravaniya, Anguttara Nikāya, XIV.1; see Journal of the Deptt. of Letters, Calcutta University, 1920, p. 233).

Patanjali speaks of its white trunk (gaura-kānda), small leaves (sūkshma-parna), and hard bark (kaiikatavān, I.113).

8. Śimśapā (VII.3.1), Delbergia Sisoo; also included in

the Palāšādi group (IV,3.141).

9. Varana (IV.2.82), Crataeva religiosa. (Hindi barnā; (Watt, Dict., Vol. VI. pt. I, p. 340; Hindi name chhaukrā and Varana (Gk. Aornos) situated near the groves of this tree.

- 10. Samī (V.3.88 and IV.3.142), Prosopis spicigera, found in the arid dry zones of the Punjab, Sindh and Rajputana (Watt, Dict., Vol. VI, pt. I, p.340; Hindi name chhaukrā and jand). A small tree was called samira, and articles made of it śamila.
- 11. Pilu (V.2.24 and VI. 3.121), Salvadora indica, a large evergreen tree of the same habitat as sāmī. Payment made, or incidents happening under the pîlu trees were called pailumūla (V.1.97). The Vāhīka country had large forests of pilu trees (Karnaparva, 44, 31). Such places were used by the cattle thieves as places for concealing stolen animals (Watt, Dict., Vol. VI, pt. II, p. 448), and as out of the way places they gave scope to criminal acts, as stated in the Mahābhārata (Karnaparva, 44, 20-22). The ripe small berries of Pîlu were called pīlukuna in the time of Păṇini (V.2.24), a word still surviving in the Punjabi dialect as bilaknā ( पिलकना ).
  - 12. Kārshya (VIII.4.5) synonymous with the Śāla (Shorea robusta). The reference to the forests of Karshya trees (Kārshya-vana) is important as pointing to the Terai forests of Sala trees in eastern India.
  - 13. Pīyūkshā (VIII.4.5) is a variety of Plaksha, also mentioned in the Tālādi (IV.3.152) and Kāšādi (IV.2.80) groups.
  - 14. Tāla (IV.3.152), Borassus Flabelliformis. Bows made of Tāla are referred to in the Mahābhārata and the Kāsikā (Tālād-dbanushi).

15. Jambū (IV.3.165), Eugenia jambolana, of which the

fruits were called jambava and jambū.

- Harītakī (IV.3.167); Terminalia chebula, noted especially for its fruits, also called barītakī (yellow myrobalan).
- 17. Vaniša (V.1.50) bamboo, also known as venu and maskara (VI.1.154); the latter is also mentioned in the Riktantra (maskaro venulo, sūtra 210).
- 18. Kāraskara (VI.1.156), stated as the name of a tree, is in the Mahābhārata the name of a people identified with the Araṭṭas (Jayaswal, J.B.O.R.S., 1933, p. 115), but the two words appear to be different.
- 19. Sidhrakā (VIII.4.4), mentioned as the proper name of a forest. The Sāma-Vidhāna Brāhmaņa refers to the fuel of the Saidhrika tree (III.6.9), of which the wood was hard (sāravriksha i.e. catechu; also Taittirīya Brāhmaṇa, III.4.10). Sidhrakā and Saidhrika were the same.
  - 20. Vishtara (VIII.3.93), a tree but unidentified.

The names of trees in the ganas are:

- 1. Karkandbū and Badara (V.2.24), Zizypbus jujuba.
- 2. Kuvala (V.2.24), as above.
- 3. Kuțaja (V.1.50), Holarrbena antidysenterica.
- 4. Pāṭalī (IV.3.136), Stereospermum suaveolens. That Pāṇini included it in the Bilvādi group is inferred from Patañ-jali's example, pāṭalāni mūlāni (vārttika 2, sūtra IV.3.166; II.328). Patañjali implies that Pāṭalī takes an by IV.3.136 to denote 'the roots thereof' and since the an suffix is not elided as a case of exception to the vārttika Pushpa-mūleshu cha ba-bulam, the ī of Pāṭalī is elided in the form pāṭala.
  - 5. Vikankata (IV.3.141), Flacourtia sapida.
  - 6. Ingudi (IV.3.164), Ximenia aegyptiaca.
- 7. Śālmalī (IV.2.82), Silk cotton tree, Bombax Mala-baricum.
  - 8. Udumbara (IV.3.152), Ficus glomerata.
  - 9. Nipa (IV.3.152), Nanclea kadamba.
- 10. Dāru (IV.3.152) referring to Pītadāru or Devadāru which as the name of a tree ending in u seems to be

implied in sūtra IV.3.139. Pitadāru also occurs in Phit sūtra (no. 37) and Sarala, a name of Devadaru (Cedrus deodara) in Patañjali (II.81).

11. Robitaka (IV.3.152), Andersonia robitaka.

12. Vibhītaka (IV.3.152), Terminalia belerica.

13. Śirīsha (IV.2.80), Mimosa sirisa (Albizzia Lebbek), mentioned in connection with the town Sairishaka (modern

Sirsā) named after it.

14. Spandana or Syandana (IV.3.141), Ougeinia Dalbergioides, an ancient tree known in the Rigueda (III.53.19). It is one of the best woods for shock-resisting ability and was used for making chariots, also called syandana cf. Hindi Sandan).

15. Kantakāra (IV.3.152), Solanum jaquini.

- 16. Karīra (IV.3.141), Capparis aphylla. Karīraprastha, a town, (VI.2.87) was named after this tree. GRASSES AND WEEDS-Panini mentions the following grasses (trina, II.4.12) in the sutras:
- 1. Sara (VIII.4.5), Sacchrum arundinaceum. Panini mentions Śaravana as the name of a forest and Śarāvatī (VI. 3.15) as a river. Patañjali mentions the names of two grasses as śara-śīryam II.4.12, I. 476). Śara is well-known, and śīrya should be identified with sairya, mentioned earlier in the Rigveda, I.191.3.

2. Kāša (IV.2.80 and VI.2.82), Saccharum spontaneum.

3. Kuśa (Poa cynosuroides) occurs in such words as kuśāgra, (V.3.105) and kuśala (V.2.63). Its feminine form was kuśā (IV.1.42). Patañjali mentions kuśa-kāsam as names of grasses (II.4.12; I.475).

4. Muñja (III.1.117), Saccharum munja. Pāṇini refers to muñja grass being treated (vipūya) in water for its fibres.

Its reeds were called ishīkā (VI.3.65).

5. Nada (Reed), IV.2.87, in such names as nadvān; IV.2.88, nadvala; IV.2.91, nadakīya, denoting a place abounding in reeds.

- 6. Śāda (IV.2.88), grass from which śādvala, a grassy land.
  - 7. Vetasa (IV.2.87), cane or Calamus rotang.
- 8. Kattrina (VI.3.103), explained by Amara as saugandhika, a fragrant grass, probably same as sugandhitejana of the Vedic literature (Vedic Index, II.453).

Grasses mentioned in the ganas.

- Vīraņa, Andropogon muricatus, also called uśīra (IV. 4. 53; IV.2.80), a fragrant grass (Kisārādi group). The gathering of vīraņa flowers was a favourite game in East India called Vīraņa-pushpa-prachāyikā, celebrated in the month of Vaišākha (April-May).
  - 2. Balvaja, Eleusine indica, (IV.2.80; IV.3.142).
- 3. Darbha (IV.3.142); also in the Gavāśva group II.4.
  11, where it occurs in such compounds as darbha-śaram.
- 4. Pūtīka (II.4.11), a grass, also known in Vedic literature (Vedic Index, II.11).

FLOWERS (PUSHPA, IV.1.64)—Pāṇini mentions kumuda, water-lily (IV.2.80, IV.2.87), and pushkara, lotus (V.2.135). The Pushkarādi-gaṇa, also contains its other synonyms, e.g. padma, utpala, bisa, mṛiṇāla. The Harītakyādi-gaṇa mentions śephālikā (Nyctanthes Arbor Tristis), a sweet-scented flower, which was known to Patañjali who refers to a cloth dyed with its colour, called śaiphālika (Bhāshya, V.3.55; II.413).

Pāṇini tells us that the flowering plants or creepers derived their names from the name of their flowering season (kālāt. pusbyat, IV.3.43) on which the Kāšīkā cites vāsantī kundalatā, i.e. the creeper Jasminum multiflorm flowering in the spring season.

HERBS (OSHADHI). The formation of the names of herbs is the subject of sūtra IV.1.64, Pāka-karṇa-parṇa-pushpa-mūla-bāl-ottara-padāch-cha. Some herbs are cited in the four

antar-gaṇa sūtras to the Ajādi group IV.1.4, which also occur as vārttikas of Kātyāyana, although Haradatta treats them as part of the gaṇa (cf. Padamañjarī proposing to correct sat-prāk-kāṇḍa as sadach kāṇḍa on the basis of the vārttika). Thus triphalā, the traid of Indian myrobalans and amūlā, Methonica Superba (Vedic Index, I.31) appear to be old names. Brāhmī, a famous herb (Herpestis Monnieria; Watt, Dict., Vol. IV, p. 225), is known to Patañjali (Bhāshya, III.233 on Pāṇini VI.4.171).

FRUITS (PHALA)—Pāṇini takes fruits as the produce of trees (cf. IV.3.163-167), but Kātyāyana and Patañjali take phala to include even grains as rice, barley, pulses, sesamum, etc., produced by the annual plants which wither away after ripening (phala-pāka-šushām upasamkhyānam, II.327). This agrees with Manu who defines osbadhi as phalapākāntā (I.46). Pāṇini refers to fruit-bearing trees (phalegrahi, III.2.26) and has made rules for denoting the fruits of various vanaspatis (Phale luk, IV.3.163 etc.), stating that the linguistic form of the name of the fruit is generally the same as that of the tree.

Mango, bilva, and jambu are important fruit-bearing trees mentioned, and berries of plaksha and harītakī are also named (IV.3.164,167). The drākshā vine, and its fruits occur in the Gaṇa-pāṭha (IV.3.167). Pāṇini's reference to Kāpiśāyana shows his acquaintance with the grapes and its wines from Afghanistan (IV.2.99). The word also occurs in the Mālādi and Yavādi-gaṇas (VI.2.88; VIII.2.9) and in a Phiṭsūtra (no. 57). Pomegranate (dāḍima) occurs in the ardharchādi gaṇa (II. 4.31), but the first definite mention of the fruit is found in Patañjali (Bhāshya, I.38 and 217). Outside India, the fruit is carved on the ancient monuments of Persepolis, Assyria and Egypt, showing its pre-Pāṇinian antiquity.

PILUKUNA—In sūtra V.2.24, Pāṇini mentions the suffix kuṇa from Pīlu (Salvadora indica) and other tree names to denote their fruits. The ending kuṇa in this sense is a peculiarity of the Punjabi dialect round about Shahpur district in

north-west Punjab where pīlukuṇa denotes the ripe pīlu berries. In Sanskrit literature the kuṇa-ending is of rare usage and Pāṇini has taken here a word from the spoken dialect nearer home.

### CH. IV, SECTION 3. FAUNA

CLASSIFICATION-Pānini classifies creation into animate (prānin, IV.3.135;154; also prānabbrit, V.1.129) and inanimate (abrānin, II.4.6; V.4.97 etc.), the two being also mentioned as chittavat, 'with mind' (V.1.89) and achitta, 'without mind' (IV.2.47). This becomes significant against the background of the Upanishadic thought where prana (vitality) and chitta (mind) are considered as the two characteristics of life. The animate world is further subdivided into human (mansushya, IV.2.134) and animal (pasu, III.3.69) kingdoms; and the latter again on the basis of their habits into domestic (grāmya-paśu, I.2.73) and wild (āranya, IV.2.129). Other modes of classification are also referred to, viz. according to size, as kshudra-jantus (II.4.8), or their food as kravyād, the carnivorous animals (III.2.69). Pre-Pāninian attempts at classification are reflected in such words as ubbayatodanta and anyatodanta, dvipad and chatushpad, ekasapha and dvisabha of Vedic literature (Vedic Index, 1.510). Mriga is generally a wild beast in the Ashtadhyayi (IV.3.51; IV.4.35), but in sūtra II.4.12 it stands for the cervidae, such as ruruprishatam in the Bhāshya signifying two species of deer. Birds are called pakshī (IV.4.35) and šakuni (II.4.12). Pānini mentions the following animals:

An elephant is called hastin (V.2.133), nāga and kuñjara (II.1.62); a trumpeting elephant with prominent trunk was śundāra (V.3.88). A herd of elephants was called hāstika (IV.2.47). The height of an elephant constituted a measure as dvihasti, trihasti (V.2.38), as high as two or three elephants, words used with reference to the depth of a moat or the height of a rampart. Pāli hatthin also denotes the size of an elephant (Milinda, p. 312; Stede, Pali Dict.) The tusk

of an elephant was called danta (V.2.113), used also as ivory; a tusker was dantāvala. Strength to kill or shoot an elephant was a mark of valour, expressed by the term bastighna (III.2.54). A goad was totra (III.2.182).

Patañjali refers to the food for elephants as hasti-vidhā (vārttika II.1.36.3, Bhāshya, I.388).

2. Camel is called ushtra (IV.3.157) and camel corps aushtraka (IV.2.39). A young camel (karabha) restrained by a chain during infancy was known as śrińkhalaka (Bandhanam asya śrińkhalam karabhe, V.2.79). Pāṇini refers to camel-riders (ushtra-sādi, VI.2.40), and to mixed corps of camels and mules (ushtra-vāmi). It seems that the term ushtra-sādi and ushtra-vāmi referred to the army units employed for quick transport.

Pāṇini mentions aushṭraka as the name of articles made from the parts (vikārāvayava, IV.3.157) of dead camels. Such articles were large and small sacks (goṇī and goṇītarī, V.3.90) made of camel hair, and leather jars of large and small size (kutū and kutupa, V.3.89), made of hides and intestinal integuments of camels (Watt, Dict. II.63-64).

3. Aśva. Horse and mare together were termed aśvavadava in the masculine gender (II.4.27). Pāṇini mentions Pārevadavā (VI.2.42), a special breed of mares from across the Indus. Kauṭilya states that the best class of horses were imported from Kamboja, Sindhu, Bāhlīka and Sauvīra (Arth, II.30).

HARANA—A mare in heat is referred to as aśvasyati (VII. 1.51) and the charges paid for her covering as harana. Harana has a technical sense in the sūtra Saptamī-hārinau-dharmye' harane (VI.2.65). The object of the rule is to regularise the formation of words denoting some customary (dharma) dues of which harana was one. The Kāśikā cites vāḍava-harana, signifying a payment given to the owner of a sire for feeding him after covering the dame (vaḍavayāḥ ayam vāḍavaḥ, tasya bījanishekād uttarakālam yad dīyate haranam iti taduchyate, Kā-

śikā). Such dues in kind or cash, were fixed by custom (dharmya) as an obligatory charge. The Mahābhārata mentions haraṇa in the wider sense of nuptial presents, both in cash and kind, given at the time of marriage; as for example those given by Krishṇa and the Yādavas to Arjuna marrying Subhadrā (haraṇam vai Subhadrāyā jñātideyam, Ādiparva 233.44). The example vāḍava-baraṇam cited in the Kāśikā seems to be an old stock-illustration.

AŚVINA-(V.2.19). Pāṇiṇi mentions it as the distance travelled by a horse in one day (asvasy-aikāhagamah). The āśvīna distance is mentioned in the Atharvaveda (VI.131.3) and the Aitareya and Tandya Brahmanas (Vedic Index, I.70; cf. also Caland's note in the Panchavinisa Br., XXV.10.16). The exact distance is not stated, but seems to have exceeded five vojanas (25 miles), since the Atharva mentions it as coming after five yojanas. Kautilya states that horses of the first, second and third class drawing a chariot (rathya) travelled 6, 9 and 12 yojanas in one day (a yojana=about 5 miles), cavalry horses 5, 8 and 10 yojanas respectively (Arth. II.30). Patañjali mentions an average horse going four yojanas and a horse of higher mettle eight yojanas in one day (Bhāshya, V.3.55; II.413). Thus the āśvīna distance travelled by a horse in one day ranged from twenty-five to sixty miles according to the class of horse and the nature of work. As against Pānini's āśvīna (aśva khañ), the form in the Atharvaveda is āśvina, derived from aśvin, a horseman. Patañjali describes sona, hema and karka (red, black and white) as colours of horses (I.251).

- 4. Khara, mentioned in connection with stables for asses, khara-śāla (IV.3.35).
- 5. Aja (Goat, IV.1.4; IV.2.39). A herd of goats was called ājaka. Goats and sheep together were called ajāvi and ajaida (cf. gaņa Tishṭhadgu). Jābāla denoted a goatherd, and mahājābāla (VI.2.38) one who was the owner of a big sheep-run. Jābāla does not seem to be a word of Sanskrit

origin. It may be traced to a Hebrew word yobel or jobil, signifying ram's horn, whence 'jubilee'. Pāṇini shows acquaintance with some Semitic and Iranian words in use across the frontier (e.g. bailibila, VI.2.38; Arabic balabila 'deadly poison', Steingass, Persian-English Dictionary, p. 1506), whence later Sanskrit balābala or bālabala; similarly karsba, berry).

- 6. Avi (Sheep, V.1.8) was also termed avika (V.4.28). A flock of rams is referred to as aurabhraka (IV.2.39). Kāt-yāyana mentions the dialectical forms avidūsa, avimarīsa, avisoḍha, as words for goat's milk (avi-dugdha, IV.2.36, II.278).
- 7. Mṛiga has a two-fold meaning in the Ashṭādhyāyī, viz. (1) wild beast (IV.3.51) in general and (2) deer (II.4. 12). Pāṇini mentions two species of deer, ṛiṣya a white-footed antelope (IV.2.80) and nyaṅku, a gazelle or small deer (VII.3.53), both being Vedic words (Vedic Index, I.115, 463). The female deer was called eṇī (IV.3.159). Patañjali refers to robit as the female of the ṛiṣya deer (I.248).

Amongst carnivorous animals (kravyād, III.2.69) are mentioned simha (VI.2.72), vyāghra (II.1.56), vṛika (V.4.41), kroshṭu (jackal, VII.1.95), biḍāla (VI.2.72), and śvā (IV.4.11). Domestic dogs bred in royal kennels were called kauleyaka (IV.2.96; cf. Kukkura Jāt. I.22, ye kukkurā rājakulambi baddhā; also Rāmāyaṇa, II.70.20).

Of birds (śakuni, II.4.12, pakshī, IV.4.35 or tiryach, III.4.60), individual names are chaṭakā (sparrow, IV.1.128), mayūra (peacock, II.1.72, also kalāpin, IV.3.48), kukkuṭa cock, IV.4.46), dhvānksha (crow, II.1.42), and śyena (hawk, VI.3.71). Śnka (parrot) is included by Patañjali in the Khaṇḍikādi gaṇa (IV.245). Pāṇini also refers to pecking birds as vishkira (VI.1.150), amongst which Charaka counts the peacock and the cock (Sūtrasthāna, XXVII.46).

Of the kshudrajantus (II.4.8), animals upto the size of a mungoose according to Patañjali, were nakula (mungoose, VI.3.75), godhā (big lizard, IV.1.129-130), ahi (snake,

IV.3.56), kshudrā, bhramara, vaṭara (kinds of bees, IV.3.119) and vaṭi (an ant, V.2.139).

Amongst acquatic animals mention is made of nakra (alligator, VI.3.75), varshābhū (frog, VI.4.84), and matsya (fish, IV.4.35) and vaisārina, a species of fish (V.4.16).

FEEDING AND STOCK—A drove of cattle was called samaja, and a drive to the pasture udaja (III.3.69). Herds of domestic cattle (grāmyapaśu-sangha) such as cows and bulls grazing together (sanghībhūtāḥ) were called gāvaḥ, after the female of the species; similarly mahishyaḥ (male and female buffaloes), and ajāḥ (he- and she-goats). But when their young ones (ataruṇa), as calves and heifers, formed a mingled herd, the masculine form vatsāḥ signified both. This idiom still holds good in such Hindi words as gāen and bachhare.

The age of an animal was expressed in terms of the number of its teeth (V.4.141) and the growth of horns (VI.2.1) and hump (V.4.146); e.g. a calf of tender age was spoken of as dvidan (with two teeth), asamjāta-kakut (without growth of hump), angula-śringa (with horns an angula long); and one of mature growth as chaturdan, shoḍan, pūrna-kakut, udgata-śringa, etc.

Pastures for cattle were called gochara (III.3.119), in which herds grazed and moved from one part to another as fodder was eaten up. An area once used for grazing and later abandoned was called gaushthina (bhutapūrva goshtha, V.2.18); similarly a woody pasture with its fodder consumed was called āsitaingavīna aranya (V.4.7). This indicates a system of shifting cowpens and pastures both in village settlements and in forest areas. Straw (busa and kadankara) was the fodder for livestock, which feeding on it was called kadankarīya (V.1.69; if Hindi dangar). Watering places for cattle are referred to as nipāna and āhāva (III.3.74), probably attached to a well as even today.

Pāṇini refers to the cattle craving for salt as lavaņasyati

(VII.1.51). Kautilya prescribes salt to be given to cattle as part of their food.

The cow and the bull were together called dhenv-anaduha (V.4.77). Prosperity in cows and calves was blessed by the expression 'Svasti bhavate sagave savatsāya (Kātyāyana on VI.3.83). A cow-pen was vraja, and cow-stall gośāla IV.3.35) and goshṭha (VIII.3.97). Goshṭpada was the place for the cows to roam (VI.1.145, gobhiḥ-sevito deśaḥ, Kāsikā). Dense forests impenetrable to cows were agoshṭpada (VI.1.145).

Gotrā in Pāṇini 'an assemblage of cows' (IV.2.51), recalls the earlier Vedic word gotra, as the common shed for cows belonging to several families. Pāṇini mentions two new synonyms of gotrā, viz. gavyā and ādhenava (IV.2.47).

The cowherds were called gopāla; special officers in charge of royal cattle were called tantipāla (VI.2.78). The son of a cowherd attaining the age when he was fit to take the cows out for grazing was called anugavīna (VI.2.78). This was analogous to the term kavachahara for a Kshattriya boy, marking the age of maturity.

LIFE-STORY OF A COW-The different stages in the lifecycle of a cow were expressed by suitable terms. The heifer attaining puberty (kālyā prajane) was termed upasaryā (HI.1. 104), and her first mating upasara (III.3.71). The Mahābbarata refers to a cow attaining full youth at the age of three (māheyī trihāyanī, Virāta, 16.6, Poona ed.). If she miscarried she was called vehat (II.1.65). On the eve of delivery she was called adyaśvinā, 'calving today or tomorrow' (V.2.13), a new term for the Vedic pravayyā (VI.1.83); and after calving grishti (II.1.65). Pănini also refers to mahagrishti (VI.2.38), a better cow whose milking period continues up to the next calving, corresponding to Vedic naityiki (=nityavatsā, naichiki, Hemachandra, Abhidhana - chintamani, IV.336). Dhenu was a cow in milk (II.1.65), also called astikshīrā by Kātyāyana (II.2.24.21). After about six months of her calving she became bashkayani (II.1.65). A cow calving every year was marked out from the rest as samānisamīnā (V.2.12). Patañjali speaks of that cow as excellent (gotarā) which not only calves every year but gives birth to a heifer (strīvatsā, II.413). A cow pledged to the creditor to pay off the debt from her milk was called dhenushyā (IV.4.89).

BULL—A very young calf was śakṛit-kari (III.2.24), corresponding to Vedic atṛiṇāda (Br. Up. 1.5.2). Next it was called vatsa and a group of them vātsaka (IV.2.39). When the cows went out for grazing, the calves were confined to special enclosures called vatsasālā (IV.3.36).

The wooden club hanging from the neck of a calf was called prāsanga, (cf. Hindi pasangā) and a calf so restrained while out grazing was prāsangya (IV.4.76). A calf of two years was called dityavāh (VII.3.1; Vedic Index, I.359). A calf above the ordinary and selected to grow as a stud bull was called ārshabbya ('good for becoming a bull,' V.1.14). As such, he was termed jātoksha, 'growing up as a bull' (V.4.77), and was not castrated. Calves intended to grow as stud bulls are given special food and care. A young (taruṇa) bull was (ukshā), more developed ukshatara (V.3.91), when fully grown up mahoksha (V.4.77), and declining in age vṛiddhoksha (V.4.77) or ṛishabhatara (V.3.91).

Similarly a draught bull was vatsa in the first stage, damya when broken, and balivarda as a bullock (Pat. on I.1.1, 1.42).

At the age of two and a half years the young bull gets his first pair of permanent teeth. This age was expressed by the word dvidan. He became chatur-dan, 'with four teeth,' at the age of three (V.4.141, Kūšikā).' Then he was given

1 Teething of young bulls and cows :

Age		Number	of tretb
2-21/2	years	2	teeth.
3	2.5	4	99
334	.50	6	81
4	31	8	99

The question of the number of teeth has its practical importance in judging

a nose-string (nātha-hari, III.2.25), and was broken (damya) and castrated.

The draught bulls were classified according to their work, e.g. rathya, drawing a chariot (IV.4.76), yugya, a yoke (IV.4.76), dhurya and dhaureya, a cart (IV.4.77), śākaṭa (IV.4.80) a cart-load, and hālika or sairika, the plough (IV.4.81). An ox accustomed to be yoked both on right and left of the yoke was called sarva-dhurīṇa (IV.4.78), and to one side only, ekadhurīṇa, the latter being of less worth.

BREEDS-Pāṇini mentions the famous Sālvaka breed of bulls reared in the Salva country (IV.2.136, Goyavagvoścha). He refers to Salva as a large confederacy of several member-states, whose number is stated to be six in the Kāśikā (IV.1.173). Patañjali mentions Ajamīdha, Ajakranda and Bodha amongst them (IV.1.170, II.269). The Mahābhārata names Mrittikāvatī as a Sālva capital, perhaps Mairta in Marwar. The location of Salvas is further suggested by Ptolemy's Bolingai living on the western slope of the Aravallis, who appear to be the Bhulingas, one of the six Salvas. (McCrindle's Ptolemy, p. 163). The Gopatha couples the Salvas with the Matsyas. Thus the Salva jana pada comprised the vast territory extending from Alwar to Bikaner or north Rajputana, and the Salvaka breed of Panini seems to be the same as the celebrated Nagauri bulls reared in the jungle-covered tracts of Nagaur in the Jodhpur State (Hunter, Imp. Gazetteer, X.159) and those of Bikaner.

Patañjali adds the name of the Vāhīka breed of bulls (1.354), and the Kāšikā two others, viz. of Kachchha (a

the age of an animal at the time of sale and purchase. The prospective buyer invariably examines the teeth to judge the age. The growth of the horns is likewise a sign of age as referred to by Pāṇini in VI.2.115 (Śṛiṅgam-avasthāyān cha). The stages of maturity were also expressed in terms of the development of the hump, e.g. the terms akakut, pūrna-kakut and unnatakakut denoted the three stages of infancy, youth and maturity (V.4.146, cf. Kāsikā).

counter-example to Pāṇini IV.2.134), and of the Ranku country (IV.2.100). The former (Kāchha gau) reared in Kathiawar is considered by Watt as the finest in north-west India, its bullocks as powerful draught animals, and cows as excellent milkers (Watt, Dict., V.669). The bull bred in Ranku was called Rānkava and Rānkavāyana.

BRANDING OF COWS (LAKSHANA). Lakshana denoted the marks branded on the body, generally ears, of cattle to distinguish ownership (pasunām svāmi-visesha-sambandha-jāāpanārtham, Kāsikā, VI.3.115). Pāṇini refers to the branding of cows in two sūtras:

- (1) Karno varna-lakshanāt (VI.2.112);
  - (2) Karne lakshanasy-āvishţ-āshţa,-pañcha mani-bhinnachbinna-chhidra-sruva-svastikasya (VI.3.115).

The first rule prescribes initial acute accent in such words as dātrākarņa, 'whose ears are marked with a sickle.' The second sūtra dealing with vowel elongation incidentally gives a list of some marks used to indicate different owners, e.g. vishṭa, ashṭa, paūcha, maṇi, bhinna, chhinna, chhidra, sruva and svastika.

The branding of cows was known in the Vedic period. The Atharvaveda refers to it as lakshma and mentions the mithuna mark (VI.141.2-3; XII.4.6). The Maitrāyaņī Sambitā (IV.2.9), Mānava Śrauta Sūtra (IX.5.1-3), and Gonāmika Parišhishṭa of the Vārāha Śrauta Sūtra give details of this ancient cattle rite and add a few more marks (Journal of Vedic Studies, Lahore, Jan. 1934, pp. 16 ff.). The Mahābhārata also refers to a census of the royal cattle (smāraṇa, Vanaparva, Ghoshayātrā, 239.4) by branding them (anka, laksha, Vanaparva, 240.4). The Arthaśāstra prescribes it for the Superintendent of Cows to 'register the branded marks, natural marks, colour and the spread of the horns of each of the cattle as part of his duties relating to the cow-pen (vraja-paryagra, Arth. II.29, p. 129). The Edicts of Aśoka emphatically disallow the branding of horses and bullocks on certain specified

days (Pillar Edict, V)<sup>1</sup>. Patañjali refers to the mark (linga) being branded on the ear or the rump of the animal (goh sakthani karne vā kritam lingam, I.3.62; I.289); the mark being also called anka (ankitā gāva ityuchyate' nyebbyo gobbyaḥ prakāsyante, VIII.2.48; III.408).

NAMES OF MARKS—Pāṇini mentions nine marks (VI.3.115); to which other names may be added from the Maitrāyaṇī Sambitā, Rik-Tantra¹ and Kāsikā, as shown below. Vishta-karṇī, a mark in Pāṇini's list, is in the Maitrāyaṇī Sambitā a mark of the cows of Agastya, those of Jamadagni having a lute and of Vasishṭha a stake (Vedic Index, I.46). The ashṭa-karṇī of Pāṇini occurs in the Rigveda (X.62.7) where Grassmann translates 'having the sign for (the number) 8 marked on the ear.' (Vedic Index, V.I.46). The use of the numerals 5 and 8 as marks put on the ears of cattle shows that writing was popularly known (Goldstücker, Pāṇini, Hîs Place in Sanskrit Literature, p. 44).

Some of these marks (lakshana) can be identified amongst the symbols stamped on punch-marks coins, e.g., 'sruva. 2svastika, 3aikuša, 4kundala, 5plīhā, 6bāṇa, 7mithuna.

9	55	1	0	00	4	47
1	2	3	4	5	6	7

<sup>&</sup>lt;sup>1</sup> See also A.S.B. Memoir, Animals in the Inscriptions of Piyadasi, p.373, referring to it as an old custom described in the sūtra literature; Pāraskara, iii.10; Šāūkhāyana iii.10; Āšvalāyana Gr. Pariiishṭa, iii.-8. Also Drāhyāyana Gribyasūtra, III.1.46 (bhuvana mark); Khādira Gribyasūtra, III.1.46.

<sup>1</sup> Karne plih-ankuša-kundal-oparisht-adby-akshata-bananam, Riktantra sūtra 217.

<sup>&</sup>lt;sup>2</sup> Allan, Coins of Ancient India, Index of Punch-marked Symbols, Index IV.

## List of Marks

Source	Name of Mark	Meaning
Pānini	1. Vishţā (-karni)	
(VI.3.115).	2. Ashṭa	Sain. Numeral 8 marked on the ear.
	3. Pañcha	Numeral 5.
	4. Mani	Jewel.
	5. Bhinna	Cleft ears.
	6. Chhinna	Clipped ears.
	7. Chhidra	Bored ears; also Mait-Sam.
	8. Sruva	Ladle.
42 C	9. Svastika	Svastika sign. Stake (also Vanaparva,
Maitrayani	10. Sthūņā	167. 33 for stake mark
Samhitā		on Arjuna's arrow).
(IV.2.9).	11. Karkarī	Lute.
	12. Puchhindyā	Perhaps the tail.
	13. Dātra	Sickle; also in Kasika.
Atharva-	14. Mithuna	Man and Woman.
veda (VI.	1.4	1000
141.2).		
Riktantra		1
(sūtra 217).	15. Plīhā	Spleen.
A. C.	16. Ankuśa	Goad.
	17. Kundala	Circle. Twitched backwards.
	18. Uparishta	Ears twitched inside.
	19. Adhi.	Ears intact.
	20. Akshata.	Arrow.
	21. Bāṇa 22. Śaṅku	Spike.
Kāšikā	The state of the s	Folded twice.
(VI.2.112;	23. Dviguņa	
(VI.3.115).		
(123.127)	24. Triguna	Folded thrice.
	25. Dvyangula	Two finger-marks.
	26. Angula	A single finger-mark.

#### CH. IV, SECTION 4. ARTS AND CRAFTS

MEANING OF ŚILPA—Pāṇini mentions śilpa as a general word denoting both fine arts, like dance and music (III.2.55), and crafts (VI.2.62). Dancers (nartaka), musicians (gāyana) and instrumentalists (vādaka) are all called śilpins (III.1.146; IV.4.56). This meaning agrees with that in Buddhist literatrue where the sippas include the work of craftsmen and even acrobats. The Kaushītakī Brāhmaņa also regards dance and song as śilpa (XXIX.5). The Arthaśāstra considers proficiency in military science as a śilpa, trained soldiers being referred to as śilpavantaḥ pādātāḥ (Arth. V.3, p. 248), a king's inspection of military parade as śilpa-darśana.

Păṇini refers to a worker in handicrafts as kāri (IV.1.152), which the Kāšikā explains as kāru, such as weavers, (kāri-śabdaḥ kārūṇāin tantuvāyādīnāin vāchakaḥ). Kāri is absent in the Arthaśāstra, but kāru is mentioned along with the śilpins (kāru-śilpinaḥ, Arth. II.36, p. 144). Kātyāyana uses the word kāri to denote an artisan (vārttika on IV.1.159).

CLASSES OF ARTISANS—Pāṇini mentions the village artisans as grāmaśilpins (VI.2.62), e.g. the village carpenter (grāma-takshā, V.4.95), potter and barber. Patañjali says that in each village there were at least five artisans (tatra chāvarataḥ pañchakārukī bhavati, I.1.48; I.118), amongst whom Nāgeśa includes the potter, black-smith, carpenter (vardhaki), barber and washerman.

Pāṇini mentions the skilled artisans as rāja-śilpins (Rājā cha braśamsāyām, VI.2.63), e.g. rāja-nāpita, rāja-kulāla. Perhaps these enjoyed the patronage of kings from whom they were so named. Patañjali clearly says that a carpenter engaged to work for the king did not entertain private work (taksbā rāja-karmani pravartamānah svam karma jahāti, Bhāshya, II.2.1; I. 364).

Pāṇini condemns vile artisans as pāpa-silpī (VI.2.68). The grāma-taksha (V.4.95) was a carpenter who went to work on daily wages to the house of his clients in the village. On the other hand, the kauṭa-taksha was one who worked on his own account in his own workshop (kuṭī) and was thus of a higher status. This distinction still obtains in rural economy (cf. Aurel Stein, Hatim's Tales, p. 41). The carpenter working at his own house is paid for his work a share of the agriculture produce by his customers.

NAMES OF SILPAS—Of those devoted to the art of music Pāṇini mentions gāthaka (III.1.146), gāyana, (III.1.147), māḍḍukika (IV.4.56), jhārjharika (IV.4.56), pāṇigha (III.2.55), tāḍagha (III.2.25), and nartaka (III.1.145, with Kātyāyana's vārttika). Names of other craftsmen in Pāṇini are

given below:

(1) KULĀLA (IV.3.118) potter; also kumbhakāra (in a gaṇa). Pottery or earthenware made by him was called kaulālaka.

(2) TAKSHĀ (V.4.95), carpenter. Pāṇini mentions tanūkarana or hewing as the chief part of the carpenter's work (cf.III.1.76). Amongst his tools reference is made to nd-ghana (III.3.80), the bench on which he works. The village carpenter played an important part in rural economy, the various agricultural implements mentioned above were made by him.

(3) DHANUSHKARA (III.2.21), a maker of bows, which were made of the wood of Tāla tree (IV.3.152) and were of several sizes (cf. maheshvāsa, a bow of 6ft. ht., VI.2.38)

(4) RAJAKA (III.1.145 as interpreted by Kātyāyana). Pānini refers to several dyes then known, the cloth dyed being named after the dye (Tena raktam rāgāt, IV.2.1.). Rāga signified both colour and dye-stuff (VI.4.26,27). Cloth dyed with red colour was known as lobitaka (V.4.32); and with black colour kālaka (V.4.33). Lākshā (IV.2.2, also called jatu, IV. 3.138) was a popular commercial dye produced in India from

very early times. Lacquer work was called jātushā. Madder (manjishṭhā, VIII.3.97), indigo (nīlī, IV.1.42), and orpiment (rochānā, IV.2.2.) were also known as dyes. A garment dyed in indigo was known as nīlā (IV.1.42). According to Kātyāyana šākalā (powdered potsherds) and kārdāmā (black mud from the bottom of a pool) also served as dyeing stuff, probably for the first process of bleaching of coarser fabrics, thus called šākalikā and kārdāmikā (Bhāshya, IV.2.2; II.271). Hāridrā, and mahārajānā are mentioned by Katyāyana as dyestuffs (IV.2.2, vārttikā).

(5) MINER—The miner (khanaka) is referred to by Kātyā-yana on III.1.145. Mining revenue was called ākarika (cf. Kāśikā on IV.3.75). Pāṇini refers to seams as prastāra (III. 3.32), on which the Kāśikā cites maṇi-prastāra, the vein of gems. The same word occurs as prastara in Kauṭilya. Traders dealing in the prastāra minerals were called prāstārika (IV.4. 72).

Amongst precious metals mention is made of gold (hiranya or jātarūpa, nuggets, IV.3.153; cf. also Vedic upachāy-ya-priḍa, III.1.123) and silver (rajata, IV.3.154). Iron (ayas, V.4.94), bell-metal (kāmsya, IV.3.168) and tin (trapu, IV. 3.138) are also mentioned. Pāṇini takes ayas both as a genus (jāti) and a species (samiñā), illustrated by the Kāšikā as kālā-yasa (iron) and lohitāyasa (copper) respectively. Sīsa and loha are mentioned in a gaṇa (IV.3.154).

GEMS—Lohitaka (ruby) and sasyaka (emerald) are mentioned (V.4.30; V.2.68) as gems (mani). Both are referred to in the Arthasastra (II.11, p. 77), the latter in the Kalpasūtra as a precious gem (sāsaga, III.13). The mines of vaidūrya (cat's eye) were in the mount Vālavāya, but the gem was cut in Vidūra (Bhāshya, IV.3.84; II.313) which gave it its name. Vālavāya mountain is cited on sūtra VI.2.77 in the Kāšikā as an old example.

(6) WEAVER. The word tantuvāya is implied in the sūtra, šilpini chākriūab (VI.2.76). The place where the weaver

plied his loom is referred to as āvāya (āvayanti asmin, III.3. 122), the loom as tantra (V.2.70), and the shuttle as pravāņi (V.4.160; tantuvāya-śalākā, Kāśikā). The process of weaving comprised stretching the warp and then weaving threads across it with a shuttle (cf. Bhāshya, āstīrņam tantram, protam tantram, I.338). Pāṇini refers to a piece of cloth or blanket fresh from the loom as tantraka (Tantrād-achirāpahrite, V.2.70), meaning a new (navaka) unbleached piece; and also nishpravāṇi, 'separated from the shuttle as a mark of the weaving being completed' (V.4.160, apanīta-śalākaḥ samāptavānaḥ, Kāśikā).

Pāṇini refers to cloth and garments as āchchhādana. Patañjali names Kāśika as the famous cloth woven in Banaras; Mādhyamika as woven in Madhyamikā or Chittor; and śāṭakas

woven in Mathurā (Bhāshya, V.3.55; II.413; I.19).

(7) BLANKET-MAKERS (kambala-kāraka, cf. Vālmīki, II. 83.14). Woollen goods were called aurņa and aurņaka (IV.3. 158). Pāṇini mentions several kinds of blankets, viz., (1) prāvāra (III;3.54), (2) pāṇḍu-kambala (IV.2.11), and (3) paṇyakambala (VI.2.42; to which Kātyāyana adds varṇaka (VII.3.45; cf. Kauṭilya, II.11, p. 80), and the Kāśikā rāṅkava (IV.2.100, a counter-example to the sūtra). Paṇyakambala (VI. 2.42) was a blanket of commercial variety of standard length and breath, being woven with a fixed measure of wool called kambalya by Pāṇini (IV.1.22, Kambalāch-cha saṃjñāyām), equal to 100 palas or 5 seers in weight (Kāśikā). Prāvāra was a special variety of light woollen covering woven on the loom (cf. tantraka prāvāra, V.2.70).

PĀŅDUKAMBALA—This blanket was used for the mounting of chariots, which were called pāṇḍukambalī after it (IV.2. 11). The Kāšikā explains pāṇḍukambala as a high class coloured rug used for royal seats (rājāstaraṇasya varṇakambalasya vāchakaḥ). The Jātakas mention it as the stuff for covering the throne of Indra (II.188; III.53; IV.8), and the back of a royal elephant (Vessantara Jātaka, VI.490), and also add

that it was of a bright red colour woven in Gandhara (Indagopakavannābhā Gandhārā pamḍukambalā, Ves. Jāt., VI.500). Gandhāra, the home of wool in Vedic times, continued later on as a centre of wool-weaving industry. The pāmḍukambala may be identified with the blankets still woven in the Swat valley, which have beautiful borders of scarlet colour.

Sir Aurel Stein during his tours of the Upper Swat valley found blanket weaving as an ancient craft there: 'One of the crafts is represented by those heavy and gaily but tastefully coloured woollen blankets that the North-West of India knows as 'Swati Kambals' or rugs. They are all brought from Churrai and are mostly made by the womenfolk in the side valley of Chihil-dara which descends to that place from the high snowy range towards Kana and Dubér on the east. To a lesser extent they are woven also in other side valleys of Torwal. That this local industry is as ancient as the Darad race that retains its hold there is proved by a passage of Mahāvāṇija-Jātaka which the great French Indologist M. Sylvain Lévi, quotes in his comments on that curious Buddhist Sanskrit text published by him under the title of 'Le catalogue géographique des Yaksa dans la Mahāmāyūrī.' The Jātaka passage referring to commodities of great value mentions also 'the fabric of Kāśi' or Benares, and the kambala of Uddiyana, Kasikani cha vatthani Uddiyane cha kambale (IV.352). There can be no doubt about M. Sylvain Lévi rightly recognizing Uddiyāna, the true ancient name of Swat, in that of the locality here mentined ... Indian literature can scarcely contain any earlier testimony to the antiquity of a still flourishing local industry than this Jātaka passage. Unfortunately though the ancient skill in weaving and the use of traditional patterns still survive, the introduction of aniline dves has here, as elsewhere in the East, brought about a sad and rapid decline in the harmonious blending of colours. Rugs produced with the fine old vegetable dyes, such as were still obtainable at Peshawar some thirty years ago, could now no longer be found for me even in the remote plied his loom is referred to as āvāya (āvayanti asmin, III.3. 122), the loom as tantra (V.2.70), and the shuttle as pravāņi (V.4.160; tantuvāya-śalākā, Kāśikā). The process of weaving comprised stretching the warp and then weaving threads across it with a shuttle (cf. Bhāshya, āstīrņam tantram, protam tantram, I.338). Pāṇini refers to a piece of cloth or blanket fresh from the loom as tantraka (Tantrād-achirāpahrite, V.2.70), meaning a new (navaka) unbleached piece; and also nishpravāṇi, 'separated from the shuttle as a mark of the weaving being completed' (V.4.160, apanīta-śalākah samāptavānah, Kāśikā).

Pāṇini refers to cloth and garments as āchchhādana. Patañjali names Kāśika as the famous cloth woven in Banaras; Mādhyamika as woven in Madhyamikā or Chittor; and śāṭakas

woven in Mathurā (Bhāshya, V.3.55; II.413; I.19).

(7) BLANKET-MAKERS (kambala-kāraka, cf. Vālmīki, II. 83.14). Woollen goods were called aurņa and aurņaka (IV.3. 158). Pāṇini mentions several kinds of blankets, viz., (1) prāvāra (III;3.54), (2) pāṇḍu-kambala (IV.2.11), and (3) paṇyakambala (VI.2.42; to which Kātyāyana adds varṇaka (VII.3.45; cf. Kauṭilya, II.11, p. 80), and the Kāšikā rāṅkava (IV.2.100, a counter-example to the sūtra). Paṇyakambala (VI. 2.42) was a blanket of commercial variety of standard length and breath, being woven with a fixed measure of wool called kambalya by Pāṇini (IV.1.22, Kambalāch-cha saṅṇñāyām), equal to 100 palas or 5 seers in weight (Kāšikā). Prāvāra was a special variety of light woollen covering woven on the loom (cf. tantraka prāvāra, V.2.70).

PĀŅDUKAMBALA—This blanket was used for the mounting of chariots, which were called pāṇḍukambalā after it (IV.2. 11). The Kāšikā explains pāṇḍukambala as a high class coloured rug used for royal seats (rājāslaraṇasya varṇakambalasya vāchakaḥ). The Jātakas mention it as the stuff for covering the throne of Indra (II.188; III.53; IV.8), and the back of a royal elephant (Vessantara Jātaka, VI.490), and also add

that it was of a bright red colour woven in Gandhāra (Indagopakavannābhā Gandhārā panidukambalā, Ves. Jāt., VI.500). Gandhāra, the home of wool in Vedic times, continued later on as a centre of wool-weaving industry. The pānidukambala may be identified with the blankets still woven in the Swat valley, which have beautiful borders of scarlet colour.

Sir Aurel Stein during his tours of the Upper Swat valley found blanket weaving as an ancient craft there: 'One of the crafts is represented by those heavy and gaily but tastefully coloured woollen blankets that the North-West of India knows as 'Swātī Kambals' or rugs. They are all brought from Churrai and are mostly made by the womenfolk in the side valley of Chihil-dara which descends to that place from the high snowy range towards Kāna and Dubér on the east. To a lesser extent they are woven also in other side valleys of Torwal. That this local industry is as ancient as the Darad race that retains its hold there is proved by a passage of Mahāvānija-Jātaka which the great French Indologist M. Sylvain Lévi, quotes in his comments on that curious Buddhist Sanskrit text published by him under the title of 'Le catalogue géographique des Yakşa dans la Mahāmāyūrī.' The Jātaka passage referring to commodities of great value mentions also 'the fabric of Kāśi' or Benares, and the kambala of Uddiyana, Kasikani cha vatthani Uddiyane cha kambale (IV.352). There can be no doubt about M. Sylvain Lévi rightly recognizing Uddiyāna, the true ancient name of Swat, in that of the locality here mentined ... Indian literature can scarcely contain any earlier testimony to the antiquity of a still flourishing local industry than this Jātaka passage. Unfortunately though the ancient skill in weaving and the use of traditional patterns still survive, the introduction of aniline dyes has here, as elsewhere in the East, brought about a sad and rapid decline in the harmonious blending of colours. Rugs produced with the fine old vegetable dyes, such as were still obtainable at Peshawar some thirty years ago, could now no longer be found for me even in the remote tract where this manufacture has had its home for so many centuries.' (Sir Aurel Stein, An Archl. Tour în Upper Swat and Adjacent Hill Tracts, A.S.M., No. 42, p.63). In my visit to Peshawar in 1940 I also purchased a Swati blanket with brilliant red borders of attractive design, recalling the Jātaka description indagopaka-vaṇṇābbā. Uḍḍiyāna is known to Kātyāyana as Urdi and Aurddāyanī (Vārttika on IV.2.99).

- (8) LEATHER-WORKERS—Articles made of leather (V.1. 15, Charmano'ñ) are mentioned, e.g., naddbrī, strap (III.2 182) and vardbra, leather thong (IV.3.149) (called naddbī, baddbī in Hindi); sometimes varatrā, strong rope was also made of leather (Kāšikā on V.1.15). Pāṇini refers to skinning as tvachayati (III.1.25). An object entirely made of leather, such as a pair of shoes was called sarva-charmīṇa, which was a mark of its superior quality (sarva-charmāṇa, which was a mark of its superior quality (sarva-charmaṇaḥ kritaḥ, V.2. 5) as explained by the Kāṣikā. Pāṇini refers to the custom of manufacturing shoes to the order of a client as per measurement of his foot (anuḥadañ baddhā), such a pair being called anuḥadīnā (V.2.9.). Even now such articles are regarded as of better quality than those purchased direct from a shop.
- (9) BLACKSMITH (KARMĀRA)—Of his tools mention is made of bellows (bhastrā, VII.3.47), sledge-hammer (ayo-ghana, III.3.82), axe (drughana, III.3.82), tongs (kuṭilikā, IV. 4.18), from which the smith himself was known as kauṭilika. He also manufactured iron plough-shares (ayovikārļa kušī, IV. 1.42).
- (10) GOLDSMITH (SUVARNAKĀRA)—Besides reference to gold and silver coins, Pāṇini mentions some fornaments, as ear-rings (karnikā), frontlets (lalāṭikā, IV.3-65), torque (graiveyaka, IV.2.96) and finger-rings (aṅguḍīyaka, IV.3.62). The phrase nisbṭaḥati suvarnam 'he heats the gold in the fire only once,' (Nisastaḥtāvanāsevane, VIII.3.16)2) belongs to the goldsmith's vocabulary and needs to be explained. The vi 'age goldsmith seated before his miniature qupola,

has to deal with three kinds of orders. Firstly, new gold or silver in the shape of bar or ingot is brought to him to make ornaments. Secondly, old ornaments are brought in order to be melted and shaped into new forms. In these two cases he subjects gold to repeated heating and expands it by beating, for which the expression is nistapati suvarnam. In the third case old ornaments are brought to him in order to be repolished or brightened by heating to look like new ones. For this the ornament is heated only once (anasevane) and either rubbed or immersed in a solution to be made brighter. This operation was expressed by the cerebralised form nishtapati (suvarnam suvarnakārah).

Pāṇini also mentions ākarshika, one skilled (kuśala) in testing gold on the touch-stone (ākarsha, V.2.64). The term ākarshika (IV.4.9) was also applied to a person going round with a touch-stone and testing gold (ākarsha iti suvarņa-parī-

kshārtho nikashopalah, Kāšika).

(11) LIFTERS—For scaffolding and lifting a large number of intricate knots and binding devices were being used. Pānini refers to them as bandhas (Samjñāyām, III.4.42, read with Adhikarane bandhah, III.4.41), on which the Kāšikā cites some old terms: (1) krauñcha-bandha, 'heron-knot, (2) mayūrikā-bandha, 'peafowl-knot', (3) aṭṭālikā-bandha 'tower-knot' (bandha-višeshāṇām nāmadheyāni). The Arthašāstra adds vṛi-šchika-bandha, 'scorpion-knot' (Arth, IV.8, p. 221).

# CH. IV, SECTION 5. LABOUR AND WAGES

SKILLED AND UNSKILLED LABOUR—Pāṇini refers to unskilled labourers engaged in hard manual work as karma-kara (III.2.22), and their wages as bhṛiti (karmaṇi bhṛitau, III.2.22). He has a special expression for the employment of hired labour, viz., karmakarān upanayate (I.3.36).

Skilled workmen were called śilpins and their wages vetana (śilpino nāma syabhūtyartham eve pravartante, vetanam cha lapsyāmahe, Bhāshya, III.1.26.14.; II.36). Pāṇini mentions a wage-earner as vaitanika, 'earning livelihood by means of wages (Vetanādibhyo jīvati, IV.4.12). In the Arthaśāstra, vetana includes both wages paid to artisans (Arth. II.23, p. 114) and salaries paid to government servants (ibid, V.3, p. 248).

WAGES—Both agricultural labour and skilled artisans worked to earn their livelihood (jīvikārtba, VI.2.73) through either wages, or as food received. The system of receiving a fixed payment in return or stipulated services rendered was called parikrayaṇa (I.4.44, niyatakālam vetanādinā svīkaraṇam, Kāšikā), the employer parikretā and the man employed parikrīta.

A hired workman was named after (1) the period for which he was engaged, e.g. māsika (V.1.80, Tam-adhīshṭo bhṛito bhūto bhāvī), and (2) the amount of wages fixed to be paid, e.g., pañchaka (V.1.56). A month was the unit of time for calculating wages, as seen in the examples to sūtra V. 1.80, viz., karmakaraḥ māsikaḥ māsaṁ bhṛitaḥ. This is also testified to by Kātyāyana's vārttika on V.4.116 (māsād bhṛiti-pratyaya-pūrvaḥadāt-ṭhajvidhiḥ) read along with sūtra V.1. 56.

In his comments on the above vārttika Patañjali hints at the scale of monthly wages of labourers in his time, e.g. pañchaka-māsikah, shatka-māsikah dašaka-māsikah, i.e., a workman

receiving five, six or ten (silver kārshāpaṇas) per month. Again, he mentions a labourer working for one pādika coin (one-fourth of a kārshāpaṇa) a day, i.e., seven and a half kārshpaṇas per month (karmakarāḥ kurvanti pādikam ahar-lapsyāmhe, Bhās-bya, I.3.72; I.293). Kauṭilya directs that a paṇa and a quarter per month be paid to agricultural labour supplemented with food according to work done (Arth. II.24, p. 118). He states that wages in cash were convertible into kind at the rate of 60 paṇas per āḍhaka (Arth. V.3, p. 249). In Patañjali's time also food with clothing was given to dāsas and karmakaras (yadetad-dāsa-karmakaram .... bhaktam cha chelam cha lapsyāmhe, Bhāsbya, II.36). Pāṇini mentions workmen receiving daily food as bhākta or bhāktika (IV.4.68). The Jātakas also refer to wages in the form of food, such as yavāgū and bhākta.

#### CH. IV, SECTION 6. TRADE AND COMMERCE

Păņini uses a variety of terms connected with trade, e.g., currency and barter (nimāna), traders (vāṇija) and trade routes (patha), sale and purchase (kraya-vikraya), shops (āpaṇa), saleable commodities (paṇya), taxes on trade (śulka) and banking and loans (riṇa).

VYAVHĀRA (BUSINESS)—Trade and commerce are implied in the general term vyavahāra (II.3.57), also called paṇa (II.3.57). Its main feature is kraya-vikraya (IV.4.13), i.e., sale and purchase. It appears that vyavahāra included larger business such as export and import, while paṇa denoted local sale and purchase, whence saleable goods were called paṇya (IV.4.51).

TRADERS—Traders are called vanik (III.3.52) and vānija, (VI.2.13). These terms seem to have been applied to traders without reference to caste, e.g., Madra-vānija, one who traded with the Madra country (VI.2.13).

Merchants were named after the nature of their business and the amount of capital they invested in it, e.g., (1) kraya-vikrayika, whose main occupation was buying and selling (IV. 4.13); and (2) vasnika, a merchant who invested his own money in business (IV.4.13); and (3) sāmsthānika, a member of a commercial guild (samsthāna, IV.4.72). The last was probably the same as sārthika or sārthavāha mentioned in the Jātakas. Pāṇini also refers to other classes of traders, e.g., prā-stārika, one who deals in minerals; kaṭhine vyavharati, one who deals in forest produce like bamboo (vamsa) and grasses (vār-dha, IV.4.72, Kāsikā).

The traders were also named after the articles in which they dealt and from the countries visited by them for business (Gantavya-panyam vāṇije, VI.2.13), e.g., aśva-vāṇija, a dealer

in horses, and Gāndhāri-vāṇija, a trader who goes to Gandhāra on business (gatvā vyavabarati, Kāšikā), Kāšmira-vāṇija, Madra-vāṇija. These examples of merchants visiting distant provinces on business point to inter-provincial commercial intercourse and activity. The Jātakas often refer to merchants from eastern India going with their caravans to remote destinations in north-west India, e.g., trade relations between Videha and Kashmīra and Gandhāra (III.365), Magadha and Sovīra (Vimānavatthu Aṭṭhakathā, p. 336), Rājagṛiha and Śrāvastī (Sutta Nip., vv. 1012-3), Banāras and Śrāvastī (II.294), and Banāras and Ujjain (II.248) [B. C. Law, India as Described in Buddhist and Jain Texts, p. 185]. As a matter of fact the names of merchants envisaged in Pāṇini's rule would better apply to merchants trading with distant countries.

BUSINESS—A place of business was called āpaṇa (III. 3. 119, etya tasminn-āpaṇanta ityāpaṇaḥ, Kāšikā) and articles of trade paṇya and paṇitavya (III. 1. 101). These when properly displayed in shops were called krayya, 'to be sold' (Krayyastadarthe, VI. 1. 82). Paṇya is a general term for merchandise, while krayya denotes wares marked out for sale.

The sūtra Tena krītam (V. 1. 37), 'purchased with that', points to the practice of sale and purchase of goods for a price fixed between the buyer and the seller. Pāṇini mentions several coins of gold, silver and copper which served as media of exchange (infra, Sec. 9).

The articles purchased in the market were named after the price paid for them. A variety of epithets are noted as applied to articles purchased for one nishka (V. 1. 20), 2 nishkas, 3 nishkas (V. 1. 30), 1 or 1½ vimsatika coin (V. 1. 32), 1 satamāna (V. 1. 27), 1 kārshāpaņa or 1000 kārshāpaņas (V. 1. 29), a sāņa coin, or a pāda, or a māsha of copper (V. 1. 34-35), etc. Thus articles with a wide range of values are mentioned, e.g. those valued at one thousand or more silver pieces (sahasra kārshāpaṇas, V. 1. 27), and those of the lowest value like a copper māsha. The system of barter

(nimāna, V. 2. 47) was also known (infra, Sec. 7).

EARNEST-MONEY—In settling the sale and purchase of goods it is customary for the buyer to advance earnest-money to the seller as gurantee of good faith. Pāṇini refers to such a contract as satyāpayati (III. 1. 25) or satyā karoti (V. 4. 66) (mayaitat kretavyamiti tathyam karoti, Kāšikā), and to the earnest money as satyamkāra (VI.3.70; cf. Hindi sāī, part of the price paid in advance). The system of satyāpana, paying earnest money extends even to hired workmen, as confectioners engaged to work for a feast.

CAPITAL AND PROFIT-Profit is called labba (V. 1. 47). Pāṇini draws a clear distinction between the capital invested called mula, and the profit earned on it (mulena anamya) as mūlya (IV.4.91, patādīnām utpattikāranam mūlam, mūlyam hi sagunam mūlam, Kāšikā; 'mūla is the cost-price of cloth and mulya is the cost with profits'). Pānini also notes a second meaning of milya to denote an object equivalent in value to the price paid (mülena samam, IV. 4. 91). In the first instance, mulya is taken as the cost price plus profit, accruing to the seller; in the second case the object is regarded as worth the money paid. Panini refers to a sale transaction named after the amount of profit earned from it (Tadasmin vriddbyāya-lābba-śulk-opadā dīyate, V. 1. 47), e.g. panchaka, saptaka, šatya or šatika, sāhasra, i.c. a deal giving a profit of 5, 7, 100 or 1,000 coins (Kāśikā). Pańchaka, giving 5 as profit, perhaps referred to a capital sum of rupees one hundred, as we know from Kautilya mentioning the profit of a middle man to be 5% (Arth. IV. 2).

VASNA—In the Vedic literature vasna denotes the 'price' paid for anything, or its 'value' or the thing as an object of purchase, 'ware' (Vedic Index, II.278). Pāṇini discusses vasna in three sūtras (IV.4.13; V.1.51; V.1.56), where its meaning is sale-price or value realised (mūlya, Kāšikā). In the first

<sup>1</sup>Cf. Yāj. Smṛiti, II.61; also Mallinātha on Kirāta, XI, 50.

instance a vasnika trader was one who only owned a financial interest in the profits of the deal as contrasted with kraya-vikrayika (IV. 4. 13) who carried on actual business himself. Next a vasnika trader was named according to his vasna or share in the sale-proceeds (so'syāmśa-vasna-bhritayaḥ, V. 1. 56), e.g. sāhasra, 'whose share of sale-proceeds is one thousand.' This refers to some kind of corporate business as was carried on by the sāmsthānika or sārthavāha traders.

Thirdly a vasnika merchant is distinguished from a dravyaka (V. 1. 51), the latter was a trader on outward journey conveying merchandise for sale (dravya), and the former was so-called because he carried the sale-proceeds on his return journey home. The three stages in the journey of a trader are thus called: (1) barati, at the source, (2) vahati, in the process of transport, and (3) avabati, at the end of the journey. Thus a caravan merchant carrying goods from Mathura to Takshasilā would be called dravyaka in three places, viz., at Mathurā whence he was carrying (Pāṇini's harati=deśantaram prāpayati, Kāšikā), on the way while transporting (vahati), and at Takshasila where he arrived (āvahati). The same man returning from Takshasilā to Mathurā with the saleproceeds was called vasnaka at those very three stages of the journey. As specific instances of merchandise transported by the dravyaka traders, Pānini mentions vainsa (bamboo), kuțaja (Holarrhena antidysenterica), balbaja (a coarse grass, Eleusine indica, Hindi babai), mūla (roots), aksha (axle), sthūnā (pillar), asman (stone), asva (horses), ikshu (sugarcane) and khatvā (bed-steads), whence the traders were called vāmšika or vāmšabhārika, etc. Vasna went out of use after Pāṇiṇi, but survives in Bhojapuri dialect. The Arthaśāstra uses the popular mūlya. Patanjali has it once in the sense of sale-price (anyena bi vasnen-aikam gam, krināti, anyena dvau, anyena trīn, Bhāshya, I.95).

TAXES ON TRADE—Śulka denoted such taxes on trade as customs and octroi. Pāṇini mentions that the consignment

was named after the duty paid on it (V.1.47). The custom-house was called sulkasālā and the income from customs saulkasālika (stock-example on IV.3.75, Ţhag-āya-sthāne-bhyaḥ). Ardha (V. 1. 48) and bhāga (V. 1. 49) are mentioned as amounts of octroi duty, (both denoting half of a kār-shāpaṇa), the consignment being called ardhika or bhāgika (also bhāgya).

Păṇini makes a general reference to taxes levied in the eastern part of India (Prāchām kāra-nāma), amongst which Patañjali includes toll-taxes, e.g. avikatoraṇaḥ, 'one ram levied per fold of sheep (Kāranāmni cha Prāchām halādau, VI.3.10 Bhāshya, III. 144). The Kāšikā cites other stock-examples as yūtha-pašu, one animal-head per herd of cattle; nadī-dohanī, one pailful milk levied at the ferry. Other similar taxes, but not on trade were dṛishadi-māshaka, one māshaka coin collected per mill (household); mukuṭe-kārshāpaṇam, one kārshāpaṇa coin per capita; hale-dvipadikā, two pāda coins per ploughshare, which seems to have been a tax on agriculture. Patañjali considers these to be names of current taxes sanctioned by usage (loka).

TRADE ROUTES—As already stated Pāṇini mentions roads leading from one city to another (Tad-gachchhati pathi-dutayoh, IV.3.85), and marked into well-defined stages (see illustration on sūtra, III.3.136). Katyāyana mentions different kinds of trade routes, as through forests (kān-tārapatha), jungle-thickets jaingalapatha), on land (sthala-patha), and in water (vāripatha). The goods gathered (āhṛita) and transported along these routes were called after the route, e.g. kāntāra-pathika, goods coming by way of the forest. The kāntāra-patha seems to be the name of the route across the Vindhya forests which, as we know from Buddhist literature, connected Košāmbī with Pratishṭhāna and Bharu-kachchha. Ajapatha (goat-track) and śankupatha (precipitous route negotiated by spikes) were narrow pathways in mountainous regions (vārttika on V. 1. 77; Bhāshya, II. 358).

Liquorice (madhuka) and pepper (maricha) were imported by the land route called sthalapatha (Kātyāyana), evidently from the south.

In the Devapathādi-gaṇa (V. 3. 100) Pāṇini refers to various kinds of routes, e.g. vāripatha, sthalapatha, rathapatha, karipatha, ajapatha, šankupatha, rājapatha, šinhapatha, adding two more, viz. hanisapatha and devapatha, which relate to air. We get an old record of some of these in the Mahāniddesa e.g. jaṇṇupatha (correct reading vaṇṇupatha=Skt. varṇupatha, route through the sandy tract of Sindh-Sagar Doab, leading to Bannu, cf. Vaṇṇupatha Jāt.); ajapatha (goat-track), meṇ-dhapatha (ram-track), šankupatha (spike-track), chhattapatha (parasol-route), vaṇṣapatha (bamboo-track), sakuṇapatha (bird-track, cf. Pāṇini's hanisapatha), mūsikapatha ('mouse passage'), darī patha (cavern-path), and vettachāra (course of reeds) (Mahāniddesa, Vol. I. pp. 154-55; Vol. II, pp. 414-15).

Light is thrown on Pāṇini's ajapatha by the Bribatkathā ślokasangraba describing ajapatha during the coarse of a journey to Suvarṇabhūmi as a very narrow goat-track which could not be crossed by two persons from opposite sides (Bribatkathā ślokasangraha, XVIII.416; Sylvain Lèvi, 'Ptolēmée, la Niddesa et la Brihatkathā', Etudes Asiatique, Vol. II, pp. 1-55, Paris 1925). Narrow tracks leading over high mountains and defiles were negotiated with the help of goats and rams to transport merchandise.

Pāṇini's śańkupatha refers to even more difficult mountainous ascents which could be negotiated only by scaling the heights with the help of spikes or nails carefully driven into the hill-side. A Jātaka passage also refers to samkupatha (vettāchāro samkupatha pi chinne, Jat. III. 541). Pāṇini's hamsapatha corresponds to sakuṇapatha of the Mahāniddesa. Kālidāsa also refers to devapatha (=surapatha), ghanapatha and khagapatha mentioned in the order of their relative heights (Raghuvamša, XIII. 19). Dēvapatha originally was a track in the sky, but in the sūtra under reference Pāṇini refers to

devapatha as a technical term denoting the highest passage on the top of the rampart of a city, which derived its name from its height compared to the devapatha in the sky. We are indebted to the Arthasastra for this technical meaning of devapatha implied in Pāṇini's sūtra (Arthasāstra, II. 3).

UTTARAPATHA—Pāṇini mentions Uttarapatha and the articles procured (āhṛita) along that route as auttarapathiku (Uttarapathen-āhṛitain cha, V. 1. 77), the latter also denoted the travellers on it (Uttarapathena gachchhati). The Uttarapatha may be identified with the ancient highway from east India to Gandhāra and thence towards farther west. The entire Grand Trunk Road within India and as far as the Oxus, was well known to the Greeks as 'Northern Route', a literal rendering of Uttarapatha.

Its Oxo-Caspian portion from India to the West by the Oxus and the Caspian is mentioned by Strabo (II. 73; XI. 509) and Pliny (Tarn, The Greeks in Bactria and India, p. 488, Appendix 14). 'Strabo, speaking of the Oxus, states (XI, 509) that it formed a link in an important chain along which Indian goods were carried to Europe by way of the Caspian and the Black Seas. He cites as one of his authorities Patrocles, who was an admiral in the service of Antiochus I, and thus makes it clear that the route was a popular one early in the 3rd century B.C.' (Cambridge History of India, Vol. I, p. 433). Strabo also wrote that 'The Oxus is sufficiently navigable for the Indian trade to be carried across to it and to be easily brought down the river to the Hyrcanian (sea) and the places beyond as far as the Black Sea by way of the rivers.' (Tarn, op. cit., p. 489).

On the Indian side this route was linked up with Pāṭaliputra and ultimately with the mouth of the Ganges. As Rawlinson writes: 'The first thing which struck Megasthenes on entering India, was the Royal Road from the frontier to Pāṭaliputra, down which the envoy must have travelled to the capital. It was constructed in eight stages, and ran from the frontier town of Peukelaotis to Taxila; from Taxila, across the

Indus, to the Jihlam; then to the Beas, near the spot where Alexander erected his altars. From here it went to the Sutlej; from the Sutlej to the Jamna; and from the Jamna, probably via Hastinapura, to the Ganges. From the Ganges the road ran to a town called Rhodopha, and from Rhodopha to Kalinipaxa (probably Kānyakubja or Kanauj). From Kanauj it went to the mighty town of Prayaga at the junction of the Ganges and the Jamna, and from Prayaga to Pataliputra. From the capital it continued its course to the mouth of the Ganges, probably at Tamluk, though Megasthenes never traversed the last stage of the road. At every mile along the road was a stone to indicate the by-roads and distances'. (Intercourse between India and the Western World, p. 42; also its Appendix I for the distances between the stages on the Royal Road, p. 64). This great highway passed through important janapadas and cities, such as Bālhīka, Kāpiśī, Pushkalāvatī, Takshaśilā, Śākala, Hāstinapura, Rathaspā (=Sk. Rhodopha, a name of the Rāmagangā), Kānyakubja, Prayāga, Pāṭaliputra and Tāmralipti. Along this great highway must have passed up and down long caravans transporting merchandise (bhānda, III. 1. 20). On this route lay the town called Udbhanda (Ohind) as the destination where the merchandise was unloaded for transhipment across the Indus.

ARTICLES OF TRADE—As names of marketable articles (Tadasya panyam IV. 4. 51), Pāṇini mentions lavaṇa (salt, IV. 4. 52), perfumes like kiśara, tagara, guggulu, uśīra (IV. 4.53) and śalālu (a kind of perfume, IV.4.54; cf. Pālī salala, the sweet scented flower of Pinus devadara, Jāt. V. 420; Sāratthapakāsinī, III. p. 263. The Asbṭādbyāyī acquaints us with an interesting list of other economic products, such as silk fabrics (kauśeya, IV. 3. 42), wool and woollen stuffs (ūrṇā and aurṇaka, IV. 3. 158), linen and linen goods (umā and auma, IV. 3. 158), hemp (bhaṇgā, V. 2. 4), cotton (tūla, III. 1. 25; karpāsī, gaṇa of IV. 3. 136); cloth (vastra, III. 1. 21); clothing like upasamvyāna (I. 1. 36, āchchbādana, IV. 3. 143),

brihatikā (a dress reaching up to feet, V. 4. 6); blankets like panya-kambala of a fixed weight and set standard (VI. 2. 42; IV. 1. 22), prāvāra (III. 3. 54) and pāndu-kambala (IV. 2. 11) imported from Gandhara; deer skins (ajina, VI. 2. 194); skins of tigers and leopards (dvaipa, vaiyāgbra, IV. 2. 12) used as upholstering material for chariots; dye-stuffs (raga), like lac (lākshā, IV. 2. 2), orpiment (rochanā, IV. 2. 2), madder (mañjishthā, VIII. 3. 97) and indigo (nīlī, IV. 1. 42); sacks and grain containers (āvapana), as gonī (IV. 1. 42); big and small leather containers (kutū and kutupa, V. 3. 89); leather goods as shoes (upānah, V. 1. 14), straps and thongs (naddhrī, III. 2. 182, vārdbra, IV. 3. 151); iron chains (śrinkbala, V. 2. 79), spikes (ayah-sūla, V. 2. 76), tools and instruments like sickle (dātra, III. 2. 182), ploughshare (kuśi, IV. 1. 42), yoke (yuga), axle (aksha, VI. 3. 104), spade (khanitra, III. 2. 184), oar (aritra, III.2.184), loom (tantra, V.2.70) and shuttle (pravāni, V.4.160); food stuffs like guda (IV.4.103), phānita (VII.2.18), milk (kshīra), curds (dadhi), butter (haiyangavina, V.2.23), vegetables (śāka, VI.2.128), cereals and pulses (dhānyas); utensils and pottery (amatra, IV.2.14; kanlālaka, IV.3.118) of various sizes to cook different quantities (III.2.33); intoxicating drinks like madya (III.1.100), maireya (VI.2.70), surā (II.4.25) prepared in distilleries (āsuti, V.2.112) and sold in booths (śundika, IV.3.76) and the costly kāpišāyana imported from Kāpišī in north Afghanistan (IV.2.99); gold and silver ornaments like karnikā, lalāṭikā (IV.3.65); gems (mani) like emerald (sasyaka, V.2.68), ruby (lohitaka, V.4.30) and cat's eye (vaidūrya, IV. 3. 84); metals as gold, silver, copper, lead and tin; arms and weapons (sastra, III. 2. 182), as spears (sakti, IV. 4. 59), javelins (kāsū, V. 3. 90), battle-axe (parašvadha, IV. 4. 58), bows (dhanu), arrows (ishu, VI. 2. 107) and coats of mail (varma, III. 1. 25); musical instruments like lute (vīnā, III. 3. 65), tabor (madduka) cymbals (jbarjbara, IV. 4. 56); and miscellaneous objects like images (pratikriti, V. 3. 96), garland (mālā, VI. 3. 65), perfumery (IV. 4. 53; IV. 4. 54); balance (tulā, IV. 4. 91), weights (māna), measures (parimāṇa), coins; and various conveyances like wagons (śakaṭa), chariots (ratha) and boats (nau, IV. 4. 7), etc.

The Kāsikā illustrating Pāṇini VI. 2. 13 (Gantavya-paṇ-yain vāṇije) particularly mentions merchants who dealt in cows, bulls (go-vāṇija) and horses (aśva-vāṇija). Pāṇini himself refers to the famous breed of bulls from the Sālva country, (IV.2.136) and to the breed of mares from beyond the Indus (pāre-vaḍavā, VI. 2. 42).

There were some articles, trading in which was not approved, e.g. soma-vikrayī, rasa-vikrayī (Kāśikā on III. 2. 93, Karmanīni vikriyaḥ). The selling of soma plant and liquids as cow's milk was also banned by the law-books (cf. Manu, X. 86-89).

Trade depended upon provision of necessary stocks called by Pāṇini as sambhāṇḍayate (III.1.20; equal to samāchayana of Kātyāyana, and of ware-houses where they were stocked (bhāṇḍāgāra, IV.4.70).

### CH. IV, SECTION 7. EXCHANGE AND BARTER

Păṇini refers to barter as nimāna (V. 2. 47), i.e. exchange of goods by agreement. What was given in exchange was considered as equivalent in price (mūlya) to what was received (nimeya). The sūtra Samkbyāyā guṇasya nimāne mayaṭ seeks to regulate the grammatical formation expressing the barter ratio, on the pattern that the price of a portion of one thing is equal to so many portions of the other. For example, dvimayam udaśvid yavānām, "butter-milk is two-times the value of barley", i.e. two parts of barley is the price of one part of butter-milk (udaśvit). The comparison must be made with one portion of nimeya (thing to be bought) with several portions of the nimāna. The ratio must be x: 1, but never x: 2, or x: 3, etc., in which x denotes the nimāna.

NATURE OF BARTER TRANSACTIONS-The range of articles covered by barter mostly concerns simple things of ordinary use, such as food, clothing, and domesticated animals. Pāṇini refers to vasana or a piece of cloth as a medium of exchange, the thing purchased in exchange for cloth being called vāsana (V. 1. 27). In Hindi bāsan (=Skt. vāsana) means household utensils. It is thus indicated that the weavers exchanged pieces of cloth with utensils and other articles they needed. There is also reference to articles purchased for one go-puchchha (go-puchchhena krîtan, ganpuchchhikam, V. 1. 19). Dr. D. R. Bhandarkar takes go-puchchha literally to be the tail of a cow as a circulating medium, (Anc. Ind. Num., p. 169-70), but go-puchebba indicated the cow itself as in the analogous English term 'cattle-head'. The idiom had its origin in the ancient custom of transferring the ownership of a cow by holding her tail; the grazing tax levied per head of cattle is still called puchchbi or tail-tax in north India. From the Vedic period the cow had formed a medium of exchange and a measure of value (Vedic Index, I. 196, 234). The term gau-puchchhika should thus be taken to have applied to an object received in exchange for one cow. Patañjali mentions an even bigger transaction negotiated in exchange for five cows (pañchabhir-gobbih krītah pañchaguh, Bhāshya, I. 2. 44; I. 216); and also the purchasing of a chariot for five kroshtris (VII.1.96; III. 273). The meaning of kroshtri in pañcha-kroshtri-krita-ratha is not clear; it was perhaps the name of a particular stack of grain like dhanya-gava (bullstack mentioned in sūtra VI.2.72. Dvi-kambalyā, trikambalyā cited on IV.1.22 refer to sheep purchased for two or three kambalya measures of wool, one kambalya being equal to 5 seers (Kāšikā on Pāṇini V.1.3). The Kāšikā cites pañchāśvā and daśāśvā, i.e. a female slave purchased for the price of five or ten horses (IV. 1. 22).

Mention is also made of kainsa (V. 1. 25), śūrpa (V. 1. 26) and khārī (V. 1. 33) in connection with the purchase of commodities. Dr. D. R. Bhandarkar points out 'As these are clearly measures of capacity, the only inference possible is that such commodities were bought by means of these measures and most probably with grains which were the staple food of the province' (Anc. Ind. Num. p. 170). In several examples and counter-examples we find reference to other measures of weight used in bartering transactions, e.g. dvyañjali, tryanjali, purchased for two or three handfuls (dvābhām anjalibbyām kritah, Kāśikā on V.4.102, Dvi-tribbyām anjaleh). Similarly, an object purchased for two or three āchila measures was called dvyāchitā, tryāchitā (IV.1.22, āchita== 10 bhāra or 25 maunds). Pāṇini mentions saurpa and saurpika as applied to articles purchased for one śūrpa measure (V. 1. 26), to which Patanjali adds dvi-śūrpa and tri-śūrpa (II. 346, 348). The goni measure (I. 2. 50) was equal to two surpas and is mentioned in connection with barter in such phrases as pañcha-gonih and dasa-gonih, 'purchased for 5 or 10 gonis' (I. 226), the articles so purchased being cloth according to the Kāsikā (I. 2. 50).

The examples pañcha-nauḥ, daśa-nauḥ refer to a big deal in exchange for five or ten boatfuls of merchandise (Kāśikā on Nāvo Dvigoḥ, V. 4. 99). Patañjali refers to consignments of five hundred boats or five hundred rafts (pañch-oḍuṇa-śatāni tīrṇāni, pañcha-phalaka- śatāni tīrnāṇi, Bhāshya, II. 356), which point to a flourishing riverine traffic in goods which rich merchants (parama-vāṇija, uttama-vāṇija on Pāṇini V.2.13) must have handled.

### CH. IV, SECTION 8. MEASURES AND WEIGHTS

TERMS—The word parimāņa in the Ashṭādhyāyī denotes cubic and gravitational measures, and pramāṇa a lineal measure. According to Patañjali¹ unmāna is a measure of weight, parimāṇa of volume or capacity (sarvatomānam), and pramāṇa a lineal measure (āyāma). Pautava used in the Arthaśāstra (Cf. Pautavādhyaksha, Superintendent of Weights and Measures) is unknown to Pānini.

Parimāņa has a two-fold sense in the Ashṭādhyāyī. In its technical (rūḍha) sense it excludes sankhyā or number as in sūtra V. 1. 19 where both words are used together; and in a more general sense it includes even samkhyā, as in sūtras III. 3. 20 and IV. 3. 156 (where the Kāsikā specially notes the comprehensive meaning of parimāṇa). Parimāṇa thus denoted weights and measures from which the numerals as also measures of time were excluded, as stated by Patañjali on the authority of an old vārttika (jūāpakam tu kāla-parimāṇānām parimāṇāgrahaṇasya, III. 321; VII. 3. 15). The lineal measures whenever they are mentioned are strictly distinguished as pramāna.

SCALE—A scale is called tulā, and articles weighed with a balance tulya (tulayā sammitam, IV.4.91). The string fastened to the horizontal rod in order to lift the scales was called pragraba in the language of traders (Pre vanijām, III. 3. 52). The measures appear to have been made of wood. The word dravya found earlier in the Atharvaveda (V. 20. 2) and meaning 'wooden', is mentioned by Pāṇini to denote a measure (Māne vayaḥ, IV. 3. 162) and is reminiscent of the times when wooden measures were in use. A tradition recorded in gram-

<sup>&</sup>lt;sup>1</sup> Ūrdbvamānam kilonmānam parimānam tu sarvatah, Āyāmas tu pramānam syāt samkbyā bābyā tu sarvatah, Bhāsbya, V.1.19; II.343.

matical literature credits a Nanda king with the standardising of weights and measures for the first time (Nandopakramāṇi mānāni, Kāšikā, II. 4. 21 and VI. 2. 14). This may have been due to meet the needs of a vast empire. By the time of Patañjali, measures like droṇa, khārī and āḍbaka, etc., had been fixed as of an approved standard (aktaparimāṇanām arthānāti vāchakā bhavanti naivādhike bhavanti na cha nyūne, Bhāshya, I.4.13; I.216).

WEIGHTS-Pāṇini mentions the following weights:

(1) Māsha—It occurs as the name of a coin (V. 1. 34), and also denoted a corresponding weight, which was 5 rattis for gold and copper and 2 for silver (Arth. and Manu).

Pāṇini also refers to nishpāva (III. 2. 28), which finds mention in Jain literature (Anuyogadvāra Sūtra, 132) after guñjā and kākiņī and was used for weighing gold, silver, jewels, pearls, etc.

- (2) Śāṇa—It is referred to in two sūtras (V. 1. 35; VII. 3. 17) as the name of a coin. According to the Mahābhārata śāṇa was one-eighth of a śatamāṇa or 100 rattis (Vanaparva, 134. 14), and thus weighed 12½ rattis. Charaka refers to śāṇa as one-fourth of a suvarṇa, i.e. four māshakas or 20 rattis (Kalpasthāna, XII. 89), and its half-weight as śāṇārdha for weighing small doses of medicine (Chikitsāsthāna, XXVI, 248).
- (3) Bista (IV. 1. 22; V. 1. 31). Pāṇini refers to articles purchased for two or three bistas. The Amarakośa explains bista as a synonym of karsha or aksha used for weighing gold. Charaka treats karsha, suvarna and aksha as synonyms. It appears that Pāṇini used bista as a synonym for suvarna. Thus bista was equal to 80 rattis.
- (4) Añjali (V. 4. 102). In such phrases as 'purchased for two or three añjalis' (dvy-añjali, try-añjali) añjali is a definite measure. According to Charaka 16 suvarņas make one añjali, which was also called kuḍava. Kauṭilya makes kuḍava as the basis of calculating higher weights, e.g. four kuḍavas=

one prastba, and four prastbas—one āḍbaka (Arth., Vol. II.19). This is the same scale as in Charaka.

- (5) Āḍhaka (V. 1. 53). It was a weight equal to 16 kuḍavas or 256 karshas. Charaka makes pātra a synonym of āḍhaka (Kalpasthāna, XII.94). Pāṇini mentions both these in sūtra V. 1. 53, with reference to cooks able to handle so much quantity. Special mention is made of fields requiring one pātra of seed for sowing (V. 1. 46, pātrikam kshetram, pātrikī kshetrabhaktiḥ).
- (6) Kainsa (V. 1. 25; VI. 2. 122). Charaka explains kainsa as equal to 8 prasthas or 2 āḍhakas. In the older literature kainsa is said to have denoted a pot or vessel of metal (Vedic Index, 1.130).
- (7) Mantha (VI. 2. 122). The exact weight is not indicated in any table, but Pāṇini mentions it after kamsa and before śūrpa as a measure-denoting word, and this makes it highly probable that mantha corresponds to drona with its synonyms of kalasa and ghaṭa in the table of Charaka. A mantha would thus be equal to 4 kamsas or 8 āḍhakas.
- (8) Śūrpa (V. 1. 26; VI. 2. 122). It was a measure equal to two dronas (Charaka).
- (9) Khārī (V.1.33). Pāṇini refers to an article purchased for 1½ khārī called adhyardha-khārīka, and says that in the opinion of the Eastern grammarians khārī becomes khāra in a Dvigu compound (V. 4. 101, Khāryāḥ Prāchām). Kātyāyana mentions the latter form in the vārttika khāra-satādyartham (V. 1. 58). It appears that khārī was the unit for measuring large heaps of corn, as in the expression khāra-satīka rāśi and khāra-sahasrika rāśi, heap of corn on the threshing floor weighing 100 and 1000 khārīs (Bhāshya, II. 353) A khārī was certainly a higher weight than droṇa as Patañjali would have it (adhiko droṇaḥ khāryām, II. 387; V. 2. 73). The Arthasāstra defines khārī equal to 16 droṇas (II. 19.). In the table of Charaka 4 droṇas make 1 khārī.
  - (10) Goni (I. 2. 50). A śloka-vārttika interprets goni

as a measure (Bhāshya, I.2.50 I.226), goņī mātramidam goņih). According to Charaka goņī is synonymous with khārī.

- (11) Bhāra. It is referred to in sūtra VI. 2. 38, in connection with the derivation of mahā-bhāra. The exact significance is uncertain, but like other words of that sūtra it was a sanijā word with a definite meaning, and not a common noun. According to the table given in the Amarakośa (II.9. 87) 1 bhāra=8,000 karshas or nearly 2½ maunds. This is supported by Kauṭilya defining bhāra as equal to 20 tulās (vinitati-tauliko bhāraḥ, II. 19); a tulā being equal to 100 palas, a bhāra would be=2,000 palas or 2½ maunds. It appears that the quantity weighed at one time by a hand-balance was one tulā or 5 seers. Bhāra appears to be a head-load carried by a human being, and mahā-bhāra would indicate a quantity much in excess of this, most likely a cart-load.
- (12) Āchita (IV.1.22; V.1.53). According to Amara, āchita is a cart-load (śākaṭobhāra āchitaḥ, II.9.87), consisting of 10 bhāras, which is equal to 20,000 palas, or 25 maunds.

Other measures mentioned are pāyya (III. 1. 129), kulija (V. 1. 55), shashṭbaka (V. 3. 51), the exact significance of which is not known. The pāyya seems to be the measure called pāi in Punjab and Rajputānā and pyā in the U. P., used for measuring grain and having a capacity of 5 to 7 seers. Its smaller unit of about 3 seers is called pāyali in Bombay. In sūtra VI. 2. 122 Pāṇini regulates the accentuation of pāyya in a numeral compound. Kulija is mentioned in the Kauśika Sūtra (12 and 43). Shashṭbaka seems to be related to shashṭbāmśa a sixth part, being the amount of grain taken by the king as tax. Its minimum unit seems to be a drona measure as indicated by the term drona-māpaka, an officer appointed to collect one-sixth share of the produce (Kurudhamma Jāt. III.276). Vaha (III. 3. 119) and kumbha (VI. 2. 102) are also mentioned without being specified as measures, but in the Artha-

<sup>1</sup> Cf. Burmese pyi, a measure, about a quart (B.S.O.S., X.p.39).

śāstra kumbha was 20 dronas and vaha equal to 10 kumbhas.

Paṇa is also stated to be a parimāṇa, but not with reference to the famous coin of that name. It rather signifies bundles of vegetables tied together and sold as a unit, e.g. mūlaka-pāṇa, harita-paṇa (III.3.66).

#### MEASURES OF LENGTH

PRAMAŅA—Pramāṇa denotes a measure of length, except in VI.2.4, where it includes weights also, as go-lavaṇa, aśva-lavaṇa, salt for the cow and the horse, and in VI.2.12 where the length of time is also indicated by it as Prāchya-saptasamaḥ, Gāndhāri-saptasamaḥ, meaning a resident of seven years' standing in the Prāchya or Gandhāra country.

Pāṇini mentions the following measures of length:

- (1) Anguli (V. 4. 86). 8 barley grains (Arth. II. 20, p. 106)=1/4th of an English inch.
- (2) Dishţi and Vitasti (VI. 2. 31). Both are synonymous terms (Bhāshya, quoting a śloka-vārttika, VI.2.1; III.122). Vitasti in the table of the Arthaśāstra=12 aṅ-gulas (II. 20). But dishţi as a measure is of very rare occurrence in Indian literature. The word occurs in the Kharoshthī documents from Central Asia as diṭhi, corresponding to the Iranian measure distay, no doubt equivalent to a span (F. W. Thomas, Some Notes on Central Asian Kharoshthi Documents, B. S. O. A. S., XI, 1945, p. 547).

Patanjali also mentions the śama measure before dishți and vitasti (Bhāshya, V. 2. 37; II. 378), which according to the Arthaśāstra was equal to 14 angulas. Probably the word śambā in Pāṇini (V. 4. 58) was connected with the śama measure, and indicated that kind of intensive ploughing in which the furrow was deepened to a śama or 14 angulas of depth (śambā karoti).

(3) Purusha. Pāṇini mentions the purusha measure, preceded by a numeral, to denote depth (Purushāt pramāņe' nyatarasyām, IV.1.24), e.g. dvipurushā, dvipurushī; tripurushā,

tripurushī parikhā, a moat 2 or 3 'purushas' deep; or dvipurusham, tripurusham udakam; water 2 or 3 purusha measures deep (Purusha-hastibhyām-aņ cha, V.2.38, Kāśikā). Anything equal to 1 purusha measure in depth was called paurusha.

The purusha measure is stated in the Arthasastra to be of three kinds:

- (i) 5' 3"=84 angulas=1 vyāma=1 khāta purusha, for measuring ropes, moats and depths;
- (ii) 6'=96 aingulas=4 aratni=1 purusha, being the standard height of a man, probably to measure recruits for the army;
- (iii) 6' 9"=108 āngulas=41/2 aratni=1 purusha measure, for sacrificial altars.

Thus a moat of 2 purusha measures was 10½ ft. in depth and of 3 purushas 15¾ ft. According to Baudhāyana the purusha measure or altars was slightly bigger: Pañchāratniḥ purusho vyāmaścha (Baudh. S. XXX. 1. p. 389)), i.e. a purusha or vyāma is equal to 5 aratnis or 7½ ft. (cf. also Padamañjarī on IV. 1. 24, Pañchāratniḥ purusha iti Śulva-vidah).

(4) Hastin. A basti measure is to be determined from the standard measurement of an elephant of the best class at forty years age, viz. 'seven aratnis in height, nine aratnis in length, ten aratnis in circumference' (Arth. II. 31).

Kautilya, refers to the *bastī* measure twice, and at both places the length of the animal (*bastyāyāma*) is taken and not its height (p. 136). It shows that in general practice the *bastī* measure was based on the length of the animal, which was 9 aratnis=13½ ft.

The height of a rampart in the Mahāsutasoma Jātaka (V. 477) is stated as 18 cubits (aṭṭhārasa-hattha-pākārena), or 27 feet, which would be equal to 2 hastī measures. Even today a fort-wall is built to be 18 cubits in height.

(5) Kāṇḍa (IV. l. 23) is referred to as a measure for measuring the area of fields. The Arthaśāstra in the table of

field measures refers to 1 daṇḍa—six kamsas or 192 angulas, i.e. 12 ft. (Arth. II. 20, p. 107). Dvikāṇḍī, trikāṇḍī rajjuḥ, cited in the Kāśikā shows that kāṇḍa was a submultiple of rajju. The Bālamanoramā takes kāṇḍa and daṇḍa to be synonymous with a length of 16 hastas or 27 ft. The Jātakas mention the Rajjugāhaka officers connected with land-surveying (Kurudhama Jat. III 276). 1 rajju measure was equal to 10 daṇḍas. Nivartanā an ancient square measure for measuring the area of fields was equal to 3 rajjus. When kāṇḍa denoted merely a lineal measure it took the suffix nīḥ, as dvikāṇḍī rajju, but when a square measure or area of a field (kshetrabhaktī) it took ṭāḥ in the feminine gender, as dvi-kāṇḍā kshetrabhaktīḥ.

- (6) Kishku. It is included in the Gaṇa-pāṭha of VI. 1. 157 (Pāraskara-prabhṛitīni cha samijnāyam), which on the authority of Patañjali (III. 96) may be taken as a genuine reading. According to the Arthasāstra, kishku was = 32 aṅgulas (2 feet) in ordinary usage, but = 42 aṅgulas for sawyers and blacksmiths. It was a measure employed in connection with camping grounds, forts and palaces (Arth. II. 20). It is referred to in the Mahābhārata (Āraṇyakaparva, 126.29).
- (7) Yojana (V.1.74), a measure=4 gorutas or krośas =2,000 × 4 yards, or 4.54 British miles. (Cf. Arth. Trans. by Dr. Shamsastri, p. 118 with footnote).

A summary of lineal measures is given below; those in Italics being from Pāṇini.

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8 Yavas = 1 Angula = \frac{3}{4} in.
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12 Angulas = 1 Dishti or Vitasti = 9 in.

2 Vitastis = 1 Aratni = 1½ ft.

42 Angulas = 1 Kishku =  $2' 7 \frac{1}{2}''$ 

84 Angulas = 1 Khāta Paurusha = 5 1 3 ft.

216 Angulas = 1 Hastī Āyāma = 13½ ft.

192 Angulas = 1 Dāṇḍa = Kāṇḍa= 12 ft.

10 Dandas = 1 Rajju = 40 yds.

### CH. IV, SECTION 9. COINAGE

The Ārbīya section of the Asbṭādbyāyī (Adbyāya V, pāda 1, sūtras 19-37) furnishes some important data in respect of the oldest coinage of India.¹ The general sense governing these sūtras is that of Tena krītam (V. 1. 37), 'purchased with that', and Tad-arbati (V.1.63), 'worth that'. An attempt is made here to bring together the available evidence from the sūtras and their commentaries, and to discuss it with a view to identifying the denominations and value of those coins in the light of facts known from ancient Indian numismatic history.

### GOLD COINS-Nishka and Suvarna.

1. Nishka. 'As early as the Rigveda traces are seen of the use of Nishka as a sort of currency, for a singer celebrates the receipt of a hundred Nishkas and a hundred steeds: he could hardly require the Nishkas merely for purposes of personal adornment. Later the use of Nishkas as currency is quite clear.' (Vedic Index, I. 455). The Satapatha Brāhmaṇa refers to a nishka of gold (XI. 4. 1. 8). The Jātakas also mention nishka as a gold coin (A. I. N., p. 48).

Pāņini mentions nishka in the following three sūtras:

- (i) Asamāse nishkādibhyaḥ (V.1.20), i.e. the thak suffix is added in the sense of tena Krītam, etc. to nishka and others including paṇa, pāda, māsha, when not in a compound. For example, naishkika means 'purchased for' or 'worth' one nishka. Similarly pāṇika, pādika and māshika, denoted an article purchased for these coins.
- (ii) Dvi-tri-pūrvān-nishkāt (V. 1. 30). It refers to a transaction concluded for two or three nishkas, for which

<sup>&</sup>lt;sup>1</sup> Cf. D. R. Bhandarkar's Lectures on Ancient Indian Numismatics, p. 55, referred to here as A.I.N.

special forms were dvi-nishkam, dvi-naishkikam; tri-nishkam, tri-naishkikam.

(iii) Sata-saharāntāchcha nishkāt (V. 2. 119), i.e. the affix than comes in the sense of matup, after the words sata and sahasra, when they are prefixed to nishka. Thus in Pānini's time a possessor of one hundred nishkas was called naishkaśatika, and of one thousand nishkas, naishka-sahasrika. These appear to be real titles indicating the degree of opulence (ādbyabhava, III. 2. 56) of the person so designated. The Mbh. also refers to these two degrees of wealth, consisting of 100 and 1000 nishkas (satena nishka-ganitam sahsrena cha sammitam, Anuśāsanaparva, 13. 43). Patañjali uses the terms nishkdhana, and sata-nishkadhana (owner of 1 nishka or 100 nishka pieces, II. 414). The Kāśikā adds that it was not usual to add the word suvarna before nishka, evidently because nishka was already understood as a gold coin (Kāśikā, V. 2. 110, suvarņanishka-šatam asy-āst-īty-anabhidhānān-na bhavati). The Śatapatha Brāhmana states that the nishka offered by Uddālaka Āruņi to his learned rival Svaidāyana was of gold (Ś. Br. XI. 4. 1. 8). The Kuhaka Jātaka refers to a farmer bringing his hundred nishkas of gold to an ascetic (1. 375). According to the Mbb, the unit of wealth was reckoned at 108 nishkas of gold (sāshtam satam suvarnānam nishkam āhurdhanam tathā, Dronaparva, 67. 10). The Vessantara Jataka mentions a thousand nishkas as the amount for the redemption of Vessantara's son (VI. 546).1

Nishka as a gold coin also seems to have had its submultiples. Dr. D. R. Bhandarkar suggested that the 20,000 pādas offered by king Janaka as prize to the most learned Brāhmaṇa in the assembly of philosophers were gold coins related to nishka (A. I. N., p. 60). He also supposed that this pāda coin was the same as that referred to in Pāṇini's sūtra Paṇa-pāda-māsha-śatādyat, V. 1. 34. While it is likely that king Janaka

<sup>&</sup>lt;sup>1</sup> Dr. Bhandarkar, A.I.N., pp. 48, 49. Also Junha Jātaka (No. 456, IV.97) referring to more than a 1,000 gold nishkas.

offered gold pieces called pāda as dakshiṇā it is not certain if pāda of sūtra V. I. 34 was a token coin of the gold nishka. From its juxtaposition with paṇa it may as well have been related to the silver kārshāpaṇa, in which series it is mentioned by Kautilya (Arth. II. 12, p. 84). The submultiple pāda coin of nishka, however, did exist, as Patañjali refers to it as pannishka and pāda-nishka (Nishke chopsankhyānam kartayam, sūtra VI. 3. 56; III. 163, 'pāda optionally becomes pad before nishka'). Manu defines nishka as equal in weight to four suvarṇas or 320 rattis (chatuḥ-sauvarṇiko nishkaḥ, Mann, VIII. 137). This would make a pādanishka synonymous with suvarṇa, but since no specimens of either the nishka or suvarṇa have yet come to light, it is not possible to indicate their relative weights. The Kāsikā instances nishka-mālā (VI. 2. 55), a necklace of nishkas, as indicative of wealth in coins (biraṇya-parimāṇa).

2. Suvarņa. Pāṇini does not name the suvarņa coin, but the same is implied in sūtra Hiraņya-parimāṇam dhane (VI. 2. 55), which refers to a person's wealth in terms of coined gold, e.g. dvi-suvarņa-dhanam (Kāšikā).

Kantilya mentions suvarņa as a weight equal to 1 karsha or 80 guñjās (=140 grains). Older specimens of punchmarked suvarņa coins are wanting, but this theoretical weight is confirmed by the suvarņa coins of the Gupta period which were struck after an indigenous weight standard. From such examples as dvi-suvarņa-dhana, adhyardha-suvarņa, dvi-suvarna (purchased for 1½ or 2 suvarņas, V. 1. 29), it is certain that suvarņa was a coin with a weight of 1 karsha.

When the words *biranya* and *suvarna* are found associated together, the former denotes bullion and the latter coined gold (*birañña-suvanna* in the *Jātakas* and the *Arthāšāstra*, V. 2, p. 245, A. I. N., p. 51).

In another sūtra Pāṇini refers to pieces of gold equal to a standard weight (Jātarūpebhyaḥ parimāṇe, IV. 3. 153). Obviously such pieces were gold coins, as shown by its examples cited in the Kāšikā, viz. hāṭako nishkab, hāṭakam kāarsāpaṇam,

gold pieces or coins called nishka and kārshāpaņa struck to a standard weight. Gold kārshāpaņas are not mentioned elsewhere; and Kāsikā's reference is either to suvarņa coins of one karsha weight, or to the much later gold coins of Kedāra Kushāṇas, also referred to by it as Kedāra (V.2.120).

Whereas literary evidence supports the existence of a gold currency, so far not a single specimen of a gold punch-marked coin of any denomination has been found in any hoard. Patañ-jali is possibly hinting at gold currency when he refers to the purchase of two drona measures of corn with gold sufficient for it (dvi-dronena biranyena dbānyam krīnāti), or to the purchase of one thousand horses with the amount of gold sufficient for it (sahasra-perimāṇam sāhasram; sāhasreṇa biranyena aśvān krīnāti, Bhāshya, II. 3. 18; I. 452).

3. Suvarņa-Māshaka. The māsha coin in gold and copper weighed 5 rattis and in silver 2 rattis (cf. A. I. N., p. 52; Arth. II. 18. p. 103). Specimens of silver and copper māshas are known, but suvarņa-māshaka occurs only in litetrature. The Udaya Jātaka mentions a golden dish with suvarņa-māshakas, a silver dish with the same, and a copper dish with silver kahāpaṇas, the three being mentioned in order of their diminishing value (suvaṇṇa-māsaka-pūrām ekām suvaṇṇa-pātim, Udaya Jātaka, IV. 106-8). A silver kārshāpaṇa (32 rattis) was thus lower in value than a gold māshaka (5 rattis). Gold and silver were thus related in the ratio of about one to seven in the period of the Jātakas.

SILVER COINAGE—Satamāna. It is referred to in the sūtra Śatamāna-vimśatika-sabasra-vasanād-aņ (V. 1. 27), i.e. the affix aņ comes after śatamāna, vimśatika and others in the prescribed sense, e.g. śatamānana krītam śātamānam, an article purchased for one śatamāna was called śātamāna. From the Śatapatha Brāhmaṇa (V. 5. 5. 16 tasya trīṇi śatamānāni biranyāni daksbinā; VIII. 2. 3. 2, biranyam daksbinā suvarṇam śatamānam tasyoktam), it is evident that śatamāna was also a gold coin. According to the Vedic Index, māna

in Vedic literature was a measure of weight equivalent to the kṛishṇala or raktikā (II. 152). Thus the weight of śatamāna taken literally would be 100 rattis.

But the śatamāna was more properly related to silver coinage. In the Śatapatha Brāhmana (XIII. 2. 3.2) it is stated: 'Gold and silver will be the fee for the sake of variety to correspond to the manifold forms of the deity, and that dakshinā will be Śatamāna, since a human being lives for one hundred years' (Rajatam biranyam dakshinā nānārūpatayā śatamānam bhavati śatāyur-vai purushah, ŚB., XIII.4.2. 10). Here is a definite reference to a silver śatamāna coin of 100 parts, i.e. 100 ratti wt. Manu mentions the silver śatamāna as equal to ten dharanas or 320 rattis in wt. (VIII. 137), but no actual specimen of a silver punch-marked coin conforms to the extraordinary weight of 560 grains.

The heaviest silver punch-marked pieces so far discovered are the oblong bars found by Sir John Marshall in the Bhir mound at Taxila along with two coins of Alexander the Great and one of Philip Aridaeus, 'fresh from the mint' and therefore assignable to about the middle of fourth century B. C. Their weights range between 155.7 grains (in the case of much worn pieces) to 177.3 grains (Allan, Anc. Ind. Coins, p. xiii, also pp. 1-2). Allan connects them, without good reason, with the weight standard of the Achaemenid siglos and thinks that they were struck as double sigloi. Now, the maximum weight of the Persian sigloi is said to be 86.45 grains and that of a double siglos could not have exceeded 173 grains, which makes Allan's identification untenable (cf. Durga Prasad, Science and Culture, 1938, pp. 462-65). In terms of an Indian weight standard these oblong bars approximate to 100 ratti or 180 grains weight, the heaviest one of 177.3 grains being equal to 98.5 rattis, a ratti weighing 1.8 grs. Taking the literal meaning of satamāna, 'of the weight of 100 māna' or krishnalas as suggested in the Vedic Index (II. 152), it would appear that the Takshasilā bent-bar coins (śalākā) represent the ancient

śatamāna coins of silver. They are struck with symbols with regular orientation and were part of the oldest punch-marked currency. Kātyāyana mentions śatamāna in a vāttika¹ to regularise such formations as adbyardha-śatamānam, dvi-śatamānam (purchased for 1½ or 2 śatamānas) which suggests that the śatamāna was a current coin up to the time of Kātyā-yana (cf. also Bhāshya on V. 1. 29).

Sana. Papini refers to a range of prices in terms of sana coins, such as 11/2 śāna (Sānād-vā, V.1.35, adbyardbaśānam, adbyardba-śānyam), 2 śānas (dvi-śānam, dvaiśānam, dvi-śānyam), and 3 sanas (tri-sanam, traisanam, tri-sanam, V.1.36), to which Patanjali adds pancha-śanam and pancha-śanyam (Bhāshya, II.350). This shows sāna to have been quite a popular coin. Pāṇini also mentions sana as a parimana, i.e. weight (Parimānāntasyāsanijnā-sānayoh, VII. 3. 17), but such examples as dvai-śāṇa, purchased for 2 śāṇas, show that it was the name of a coin. Charaka refers to sana as a weight equal to one-fourth of a suvarna or karsha, i.e. 20 rattis. This may have been a gold sana of which we are not certain. But śāna as a real silver coin was one-eighth of one śatamāna as stated positively in the Mahābhārata (ashtan sanāh satamānam vahanti, Aranyakaparva, 134.14); its weight therefore was 121/2 rattis or 22.5 grs. (Cf. J. N. S. I., XIV, pp. 22-26).

Pāṇini refers to certain taxes levied in east India (VI.3.10), on which the Kāśikā cites sūpe-śāṇaḥ (VI.2.64 and VI.3.10), a special cess at the rate of one śāṇa coin per kitchen (sūpa) or household.

Kārshāpaņa. Pāņini refers to kārshāpaņa in sūtra V. 1. 29 (Vibhāshā kārshāpaņa-sahasrābhyām)<sup>2</sup> regulating the forms

Bhāshya. Adhyardha-satamānam, adhyardha-sātamānam, dvīšatamānam, dvī-šātamānam.

<sup>1</sup> Var. Suvarņa-salamānayor=upasankhyanam.

<sup>&</sup>lt;sup>2</sup> That the word kārshāpana was also included in the Ardharchādi group (II.4.31) may be stated on the strength of Patañjali (I.480) using both the masculine and neuter forms kārshāpaṇah, kārshapaṇam.

adhyardha-kārshāpanam, dvi-kārshāpanam, purchased for 11/2 or 2 kārshāpana coins.

The word kārshāpaņa is unknown in the Samhitā or Brāhmana literature (excepting once in the Sāmavidhāna Br. III.7. 9.) and is peculiarly a term of classical Sanskrit coined in the

Sūtra period.

Kārshāpana was the name of the silver punch-marked coin of which numerous hoards have been found in various parts of India. It was the standard medium of exchange from about the sixth century B. C. downwards. Like the present rupee it had its sub-multiples, of which Panini mentions 1/2 as ardha (V. 1. 48, ardha-śabdo rūpakārdhasya rūdhih, Kāśikā) and bbāga (V. 1. 49 bbāga-śabdo' pi rūpakārdhasya vāchakah); 1/4 as pāda (V. 1. 34); and 1 16 as māsha (V. 1. 34). When Pāṇini refers to big sums (V. 1. 27; 29; 34) without specifying the name of the coin it is the silver kārshāpana that is meant as being the standard coin of his time. The Jatakas also show that the kārsbāpaņa was then the standard coin of the country (cf. D. R. Bhandarkar, A. I. N. p. 79). In sūtra V. 1. 21 Pāṇini teaches a suffix after 100 (sata) without the name of a coin in the sense of 'purchased therewith'; in sūtra V. 1. 27, after 1000 (sahasra); and in V. 1. 29 after 1,500 (adhyardhasahasra) and 2000 (dvi-sahasra), etc. In all these cases the standard coin, viz. the silver kārshāpaņa, is to be understood. The Gangamāla Jātaka likewise mentions big amounts of a hundred thousand and fifty thousand pieces where karshapana is understood. Similarly, the Arthasastra (p. 368) refers in a descending order to sata-sahasra, pañchāsat-sahasra, dasasahasra, pañcha-sahasra, sahasra, sata and vinisati coins, which meant so many silver panas (kārshāpanas). The same linguistic form is known to Patañjali who mentions sata-sahasra coins without the word kārshāpaṇa (II. 1. 69. 5; I. 404), and refers to a hundred pairs of saris purchased for one hundred, i.e. 100 silver kārshāpanas (satena krītam satyam sātaka-satam, Bhāshya, V.1.21; II.3.46). On Pāṇini V.2.45 (Tad-asminn-adhikam-iti daśantād-daḥ) Patañjali definitely says that the phrase ekādaśam śatam and ekādaśam sahasram are understood to refer respectively to a hundred and a thousand kārshāpanas exceeded by eleven. Similarly śata in V. 1. 34 prefixed by adhyardha, dvi and tri would refer to 150, 200 and 300 kārshāpanas, and the same standard coin is meant in sūtra V. 4. 2 in such phrases as dvi-śatikām danditaḥ, 'fined two hundred (kārshāpanas).

It is worth noting that the Jātakas invariably refer to the name of the current coin as kahāpaṇa. The Ashṭādhyāyī uses both names, kārshāpaṇa (V. 1. 29) and paṇa (V. 1. 34); whereas the Arthaśāstra uses hundreds of times only the shorter form paṇa. It is possible that some kind of chronological sequence is indicated here. Kātyāyana records one more name for kārshāpaṇa, viz. prati, an article purchased for one kārshāpaṇa being called pratika (kārshāpaṇād vā pratis-cha, V. 1. 25; II. 347). Prati, a much later name for kārshāpaṇa, is also mentioned in the Sabhāparva (pratikam cha šatam vṛid-dhyā dadāsy-riṇam anugraham, 5.68, i.e. a relief loan at 1 p. c. interest), and also in the Nasik Cave Ins. of Ushavadāta recording 1 pratika interest on 2000 and ¾ paḍika on 1000 kahāpaṇas (Ep. Ind. VIII. 82). [See also J.N.S.I., VII. 32].

### The Table of Karshapana

In order to understand more clearly the lower denominations of the kārshāpaṇa which Pāṇini has mentioned, a comparative table of kārshāpaṇa and its sub-multiples is given below. Our best source is a passage in the Arthaśāstra¹ (Arth. II.12, p. 84), and another in the Gangamāla Jātaka², which together with the evidence from the grammatical literature furnish the following names:

 पणमर्थंपणं पादमध्यभागमिति । पादाजीवं ताम्ररूपं माषकमर्थंमायकं काकिणी-मर्थंकाकिणीमिति । (अर्थं शास्त्र २।१२)

ै तेन हि पन्नास-सहस्सानि चत्तालीस-तिस-वीसित-दस-गंब-चत्तारि-तयो हे एको कहापणो, अड्डो पादो चत्तारो मासका, तयो हे एको मासको तिपुच्छि । सब्बं पटि-खिपित्वा अड्डमासको ति बुत्ते भ्राम देव एतकं मह्यं धनं (गंगमाल जातक ३।४४६)।

Division	Pāņini	Jātakas	Arthaśāstra
1 1	Kārshāpaņa and Paņa	Kahāpaṇa	Pana
1 2	Ardha; also called Bhāga	Aḍḍha	Ardha-Paṇa
1 4	Pāda	Pāda; Chattāro Māsakā.	Pāda
1 8	Dvi-Māsha	Dve-Māsakā	Ashtabhāga
1 16	Māsha	Eka-Māsaka	Māshaka
1 32	Ardha-Māsha	Addha-Māsaka	Ardha-Māshaka
	Kakani	Kākiņī	Kākaņī
	(Vārt. on V. 1. Ardha-Kākaņī		Ardha-Kākaņī

(2) HALF-KARSHAPAŅA (Ardha and Bhāga)—Pāṇini refers to ardha (V.1.48) as the name of a current coin. Kāšikā explains it as a half kārshāþaṇa. A small transaction involving a profit, income, tax, etc. of an ardha was called ardhika. The Mahāsupina Jātaka mentions addha and pāda as current coin names coming after kārshāpaṇa (Kahāpaṇ-aḍḍha-pāda-māsa-rūpādini, Jāt. 1. 340). Kauṭilya refers to ardhapaṇa and Kātyāyana to ardha as a coin by itself (Ṭiṭhan ardhāch-cha, Vārttika on V. 1. 25); that which was purchased for an ardha was called ardhika or ardhikā.

Another important name of the ardha coin given in the Ashṭādhyāyī is bhāga, to indicate the main sub-multiple of a kārshāpaṇa (Bhāgād yach cha, V. 1. 49; Kāšikā, Bhaga-śabdo'pi rūpak-ārdhasya vāchakaḥ).

(3) QUARTER-KĀRSHĀPAŅA—Pāṇini refers to pāda in sūtra V. 1. 34. Patañjali calls it pādika paid as daily wages to a labourer (karmakarāḥ kurvanti pādikam-ahar-laḥsyāmaha iti, Bhāshya, I.3.72; I.293). The terms dvipadikā and tripadikā signifying two and three pādas respectively are obviously implied in sūtra V. 4. 1 (see Bhāshya, III. 362 for these names;

also Kāšikā on VI. 2. 65; VI. 3. 10; VI. 4. 130). They do not appear to be independent coins, but simply the pāda coin preceded by dvi and tri.

(4) ONE-EIGHTH KĀRSHĀPAŅA—Kauṭilya refers to it as ashṭabhāga, an actual coin related to the paṇa (Arth. II.12, p. 84). Manu calls it pādārdha (VIII. 404). The Ashṭādhyāyi implies dvi-māsha in sūtra V. 1. 34; the Arthaśāstra makes it a unit of weight in the Suvarṇa series (p. 103). The Jātakas are silent about one-eighth kahāpaṇa.

Cunningham thought that the tale of silver coins was limited to three divisions, the kārshāpaṇa, with its half and its quarter (Coins of Ancient India, p. 46). To this we can now definitely add the name of one-sixteenth kārshāpaṇa. Dvimāsha may also mean two pieces of māsha coins or one double piece; for purposes of grammatical rules the form of the word would be the same.

(5) MāSHA—Sūtra V. 1. 34 mentions māsha after paṇa and pāda. Māsha was both a silver and a copper coin. For purposes of grammatical formations the word-form would remain the same. A silver māsha was one-sixteenth part of a kārshāpaṇa and weighed 2 rattīs (3.6 grs.), as stated by Manu (VIII. 135, Dve krishṇale samadhrito vijneyo raupya-māsha-kaḥ). Actual specimens of silver māsha coins (raupya-māsha) have now been found in a hoard at Bhir mound, Takshasilā, and at Ṭhaṭhārī in C.P. They are minute coins with a single symbol stamped on one side, weighing 2 to 3 grains and with a diameter of .2 inches (J.N.S.I., VIII. 41; XIII, 168).

COPPER CURRENCY—The copper māsha was a sub-multiple of the copper kārshāpaņa and weighed 5 rattis, i.e. onesixteenth of a tāmrika-paṇa of 80 rattis. The kārshāpaṇa was the standard unit of both silver and copper currencies similar to the suvarṇa of the gold currency. Its lower divisions in the copper series were ardha-māshaka, kākaṇī and ardha-kākaṇī according to Kauṭilya. Pāṇini refers to adhyardha-māsha in sūtra V. 1. 34, i.e. one and a half māsha, which shows his acquaintance with an actual coin called ardhamāsha. This ardha-māsha was a copper coin.1 The addhamāsaka coin is referred to in the Jātakas (Addhamāsaka lat.).

Pāṇini does not mention the kākanī and ardha-kākanī, but Kātyāyana knows them as current coins (vārttika on V. 1. 33). Both kākanī and ardha-kākanī are mentioned in the Arthasastra (II. 12) as copper pieces, kākanīka being the charge per day for stamping weights and measures (II. 19). The Jatakas know of the kākanī coin, e.g. the Chullasetthi Jātaka states one kākaņī as the price of a dead mouse (I. 120), and the Sālittaka Jātaka refers to village boys giving a kākanī coin to a cripple saying 'Make an elephant,' 'Make a horse' (Jat., I. 419). It is possible that the kākaņī came into use after Pāṇini's time, otherwise such a singular grammatical formation would not have escaped his notice.

VIMSATIKA-(a silver punch-marked coin of 20 māshas). Pāṇini knows of a heavier kārshāpaņa called vimšatika equivalent to 20 mashas as against the standard karshapana of 16 māshas. . Vimšatika is mentioned in the following sūtras:

Satamāna-vimsatika-sahasra-vasanād-an (V. 1. 27);

1 I once thought that an addbamasa of silver (of 1 ratti=1.8 grs. theoretical weight) would be too minute to be handled and did not exist. Recently a number of minute coins were brought to me, obtained by the gold-washers in the Indus near Jahangira. The lot contains several specimens of silver ardha-māshakas, weighing 1.518, 1.132, 1.577, 1.22 grs. etc., and .160" dia, in size. One silver specimen weighs .4783 grains and is .102" in size. Nevertheless it is a regular specimen with a symbol consisting of seven globules on one side. It is an ardbakakani coin in silver. I am inclined to believe that a kākaņī and an ardba-kākaņī coin in silver also existed. This would be true of the post-Paninian, or the Mauryan epoch. For these and other specimens from Ujjain, see J.N.S.I., XIII, 164-174.

2 Vārtt, Kākanyāš-chopasamkhyānam.

Bhāsbya-Adbyardha-kākaņīkam, dvi-kākanīkam.

Vārt.-Kevalāyāi cha.

Bhāshya-Kevalāyās-ch-eti vaktavyam, kākanīkam.

i.e. an article purchased for one kākaņī coin, or 11/2 kākaņī or kākaņis.

Vimsatikāt khah (V. 1. 32).

The first rule states that the affix an is added to vinisatika and others in the sense of 'purchased for so much' (and other meanings taught upto V. 1. 63). For example, vainisatika, 'that which is purchased for a vinisatika coin'.

The second sūtra enjoins kha affix in the same sense after the word vimšatika when preceded by the word adbyardha or a numeral in a Dvigu compound, e.g. adbyardha-vimšatikīnam, dvi-vimšatīkīnam and tri-vimšatikīnam, purchased for 1½, 2 and 3 vimšatika coins.

Again in sūtra V. 1. 24 (Vimšati-trimšadbhyām dvunn-asamjnāyām) Pāṇini mentions vimšatika and trimšatka as counter-examples which in this context were names (samjnā) of coins. Thus Pāṇini knows of these two special coins in a very intimate manner. The vimšatika as its name implies was a coin of twenty, and the trimšatka of thirty parts, i.e. māshas.

As to the real nature and identity of the vimsatika coin, the following evidence throws light on a coinage system based on twenty divisions:

- (1) The commentary Samanta-pāsādikā of Buddha-ghosha on the Vinaya-Piṭaka tells us that in the time of king Bimbisāra in the city of Rajagṛiha a kabāpaṇa was equal to twenty māsakas, wherefore one pāda equalled five māsakas. This statement is confirmed by Sāratthadīpanī of Sāriputta Thera, a commentary on the Samanta-pāsādikā.
- (2) The Gaingamāla Jātaka (Jāt. III. p. 448), while mentioning the sub-divisions of a kārshāpaṇa, speaks of a four-māshaka piece as being lower in value than a pāda, which is possible only if the pāda coin be equal to five māshakas, being

<sup>2</sup> Iminā va sabba-janapadesu kahāpaņassa visatimo bhāgo māsako ti.

(Mr. Chatterji, op. cit., p. 158).

<sup>&</sup>lt;sup>1</sup> Tadā Rajagabe vīsatimāsako kahāpaņo hoti, tasmā pañchamāsako pādo. See, Some New Numismatic Terms in Pali Texts, by Mr. C. D. Chatterji M.A., J.U.P.H.S., VI, May 1933, p.157. Also Dr. Bhandarkar, A.I.N., pp. 111, 186; Dr. D. C. Sirkar, J.N.S.I., XIII. p. 187.

one quarter of a kārshāpaņa of twenty māshakas. (Dr. Bhandarkar, A.I.N., p. 112).

- (3) The Yājñavalkya-Smṛiti mentions a pala weight equal to four or five suvarṇas (I.364) on the basis of which the Mitāksharā notes: Pañcha-suvarṇa-pala-pakshe vimsatimāshah paṇo bhavati (Yāj. Smṛiti, I.365), i.e. in the case of a pala equalling five suvarṇas, the paṇa has a weight of twenty māshas.
- (4) The Kātyāyana-Smṛiti also preserves a tradition that a kārshāpana equalled twenty, and not sixteen māshas. (Bhandarkar, A.I.N. p. 186).
- (5) Patañjali cites another teacher (apara) stating that 'in times past sixteen māshas made one kārshāpaṇa', implying that in his time the kārshāpaṇa of 20 māshas or vimsatika was known in his locality. It seems that both vimsatika and kārshāpaṇa were in circulation in different localities in the same period. It is interesting to note that actual specimens of vimsatika weight coins and their lower denominations have been found in the Pańchāla coinage (Cunningham, Coins of Ancient India, p. 81).

The passages from the above sources of different periods show that the vimisatika was a current coin in certain localities, e.g. Magadha and Pañchāla, as the kārshāpaṇa of 16 māshas was in other localities. The Pāli texts definitely describe it as vīsati-māsaka kahāpaṇa, whereas Pāṇini calls it simply a vimisatika, as a specific name (samijāā) in popular usage. He is thus referring to the vimisatika and the kārsbāpaṇa as two varieties of coins of different values.

ACTUAL SPECIMENS OF VIMSATIKA COINS—B. Durga Pd. of Banaras informed me that he obtained heavy kārshāpaṇas of silver from Rājgīr. These coins weigh from 78 to 80 grains. They are now in the Lucknow Museum (acquired as part of the late numismatist's collection), and from their fabric and symbols it can be said with certainty that they represent an earlier stage than the 32 ratti kārshāpaṇas.

The period of transition from 20 māshas weight to 16 māshas seems to be the epoch of the Nanda kings who are credited with the standardisation of weights. It were most probably the Nandas who initiated a bold reform in the punch-marked currency in the matter of weight, symbols and fabric. All these factors become evident even by a superficial comparison of the vinisatika coins with the standard kārshāpaṇas of 16 māshas and 5-symbol groups.

TRIMSATKA—Besides viinsatika, Pāṇini also mentions another specific coin named trimsatka (V. 1. 24), a name which is found only in the Ashṭādhyāyī and not elsewhere. The trimsatka apparently stands for a coin of 30 māshas, or 60 rattis. B. Durga Prasad obtained from Bihar specimens of silver punch-marked coins, weighing 104 grains and 105-7 grains or about 58 rattis, which should be identified as trimsatka (cf. J.U.P.H.S., July, 1939, p. 33.).

The vimsatika and trimsatka coins also appear in copper, weighing respectively 20×5=100 and 30×5=150 rattis. As seen in the Panchala coinage, the heavier issues in copper continued in use much longer than in silver.

The vinisatika seems to have had its own sub-multiples of 1|2, 1|4, 1|8, 1|16, all related to the weight standard of 40 rattis in silver and 100 rattis in copper.

RŪPA (Punch-marked symbols)—A large number of symbols are found stamped on ancient kārshāpaṇa coins, on account of which they have been called punch-marked, corresponding to signati argenti of the Greek historian Quintius Curtius. 'The mode of manufacturing these coins was first to get ready a hammered sheet, which was then cut into strips, and sub-divided into lengths of approximately the

<sup>1</sup> The work of correctly identifying these symbols was initiated by Mr. W. Theobald (JASB, 1890 & 1901). Recently B. Durga Prasad illustrated about 564 such symbols from a large number of well preserved coins and described them in his Essay entitled 'Classification and Significance of the Symbols on the Silver Punch-marked Coins of Ancient India', Numismatic Supplement, No. XLV, 1934, p. 9ff.

desired weight, which was adjusted by clipping the corners when necessary.' (Smith, Cal. of the Coins in the Indian Museum. p. 134). After this the metallic pieces were subjected to the process of stamping symbols on them by means of a separate punch for each symbol. It is this particular stage in the process of manufacture to which Pāṇini refers in the following sūtra:

Rūpād ābata-praśamsayor-yap (V. 2. 120)

The word rūpa takes the affix yap in the sense of ābata, 'impressed', or prašamsā, praise, e.g. Rūpyo gauh, a bull of praiseworthy form; and ābatam rūpam asya rūpyo dīnārah, rūpyo kedārah, rūpyam kārshāpanam.

The first two examples of dīnāra (Denarius) and kedāra (coins of the Kedāra Kushāṇas, 3rd-4th century A.D.) do not seem to be in order, as these coins were cast in moulds and not punched. The example rūpyam kārsbāpaṇam was a genuine old example. According to the Kāsikā the symbols on such coins were struck with a punch (nighātikā-tāḍanā-dīnā). A metal piece as long as it was not stamped (ayantrita) had no use as currency.

The word rūpa in Pāṇini's sūtra being in the singular number, points to one symbol stamped with one punch at a time, i.e. for each symbol separate punching was required. We know from the standard silver coins of 16 māshas that each bears a group of five symbols of great variety, and each figure was stamed with its particular punch. On most of the specimens the two symbols in each group are the sun and a six-armed symbol (shadara), but no definite order seems to have been observed in punching and there is considerable overlapping of symbols. Some of the names of the rūpas or figures on these coins were the same as the names of marks (lakshanas) used in branding cows, as already pointed out (Ch. IV, Sect. 3).

Sometimes the term rūpa was used for the coin itself, as in the Mahāsupina Jātaka (I.340). Kauṭilya mentions an officer called Rūpadarśaka (Arth. II. 9, p. 69; 245), Exa-

miner of Coins. In his comment on a vārttika to Pāṇini's sūtra I. 4. 52, Patañjali also refers to an officer called Rūpatarka whose duty was to scrutinise the current kārshāpana coins (paśyati Rūpatarkah kārshāpanam, I.337).

# CH. IV, SECTION 10. BANKING AND LOANS

WEALTH—Wealth is referred to by several terms, such as dhana, sva, dravya, mūla, but a new classical word unknown in the Brāhmaṇa and Araṇyaka literature was svāpateya (property), corresponding to Pāli sāpateyya, of which Pāṇini gives a rather legal definition as svapatau sādhu (IV.4.104), that in which the owner (sva-pati) has valid title (sādhu-tā).

Pāṇini refers to a wealthy man as āḍhya (III. 2. 56), corresponding to Pāli aḍḍho. The Jātakas also refer to ibbhas (Skt. ibhya) who appear to be of the same status as aḍḍhas. Wealth was indicated in terms of coined gold or silver, e.g. Pāṇini mentions naishka-satika, one whose wealth amounted to 100 nishkas of gold, and naishka-sahasrika, to 1000 nishkas (V. 2. 119). Pāṇini also refers to persons possessing one hundred (aika-satika) or one thousand (aika-sahasrika, V. 2. 118), evidently kārshāḥaṇas of silver. The Jātakas refer to fabulous treasures of eighteen crores or fifty-four crores, as in the case of setthi Anāthapiṇḍaka.

MONEY-LENDING—Pāṇini mentions a creditor as uttamarņa (I.4.35); a debtor as adhamarņa (III.3.170); loan as riņa (IV.3.47); interest as vriddhi; repayment as pratidāna (I.4.92); and surety as pratibhū (III.2.179; II.3.39).

The Jātakas refer to lending money at interest (inadāna) as a means of lawful occupation, together with tillage, trade, and harvesting as four honest callings (Jāt. IV. 422; Cambridge History of India, Vol. I, p. 218). Pāṇini distinguishes interest on a loan as vṛiddhi (V. 1. 47) from usury as kusīda (IV.4.31), which is condemned (Prayachchhati garhyam, IV.4.30). The special term kusīdika was meant to mark out the usurer for social opprobrium. The odium attaches even to his family, singled out as kusīdāyī (wife of a usurer, IV.1.37).

Kātyāyana calls usurious interest vridbushi and the usurer vārdbushika (IV.4.30.3).

INTEREST-Pāṇini mentions a definite rate of interest in the expression daśaikādaśa, the creditor who gets back 11 (ekādaša) by lending 10 (IV.4.31). This amounts to the rate of about 10 percent considered usurious, and is condemned as such (garbya) by Pāṇini. Kauṭilya takes the lawful rate of interest to be 11/4% per month, (sapāda-paņā dbarmyā māsa-vriddbih pana-šatasya, Arth. III.11). Manu (VIII.140-43) and Yājñavalkya quote the same rate and call it as one-eightieth (of the principal) per month. Vasishtha (II.51) states the legal rate to be five māshas a month for twenty kārshāpaņas. Taking the latter to be a vimsatika kārshāpaņa of twenty māshas, the rate of interest works out to oneeightieth part, the same as in Manu. Nārada and Gautama agree with the above, and so also Vyāsa, if the loan is against a pledge. Thus 15% was regarded as an equitable rate of interest (dharmyā vṛiddhi). Baudhāyana prescribes 20% as interest (J.B.O.R.S., 1920, p. 117). In contrast to this the rate of the dasaikādasa loans working out to a little less than 11% was considered reproachful in Pāṇini's time. Patañjali cites two more examples of usurious loans, in which the lender earned exorbitant amounts as interest and was rightly censured as dvai-gunika and traigunika (IV.4.30; II.331). These must have referred to short term petty loans.

Pāṇini also refers to a much lower rate of interest of half a kārshāpaṇa per month called ardha and bhāga (V.1.48-49) which was equivalent to 6% per annum, the loan transaction being called ardhika or bhāgika. The Kāśikā explains it either as ½ percent (bhāgikain śatam) or 2½ percent (bhāgikā vinisatih) per month, which would make the rate of interest vary from 6% per annum to 30%.

Loans were also named from the amount of interest earned on them, e.g. pañchaka, i.e. a loan earning 5 as interest. Patañjali also refers to 7, 8, 9, and 10 as the amount of accru-

ing interest (II.351). Such loans would come under the system called dasaikādasa by Pāṇini. For example, a loan of ten rupees which would become rupees fifteen after five months was called a pañchaka loan; similarly saptaka, ashtaka, navaka and dasaka respectively. These loans applied to agricultural crops, i.e. loans advanced at sowing and repaid at harvesting.

Loans were also called after the periods stipulated for their repayment (Deyam-rine, IV.3.47), e.g. sāmvatsarika, loan for a year (IV.3.50); āvarsamaka loan for six months (IV.3.49).

There is mention of loans to be repaid in particular seasons, e.g. graismaka (IV.3.49), loan to be paid back in summer, by the full-moon of Ashādha marking the close of the financial year. These were probably repaid out of the income from the special crops grown in summer, such as melons, water-melons and vegetables. The next season for repayment was that of the rains (varsha), nicknamed as the 'season when peacocks cry' (kalāpī); a loan stipulated to be repaid at that time being called kalāpaka (IV.3.48). In the section on Agriculture we have referred to the rotation of crops known to Pāṇini and Kautilya. By looking at it we find that there is a close connection between the kalāpaka loans and the crops harvested in the rainy season and therefore called vārshika. Pāṇini refers to asvatthaka (IV.3.46) as another euphemism for loans repayable during the rains. Aśvattha was an old Vedic synonym of the asterism Śronā found in the Kāthaka Sambitā, a text known to Pāṇini (VII.4.38), and from this was derived asvatthaka to denote a loan repayable in the month of Asvattha or Śrāvaṇā constellation (IV.3.48). The Kāšikā explains ašvattha as the season when the trees called Ficus religiosa bear fruit (yasminasvatthāh phalanti).

The next season for settling loan accounts from agricultural produce was Agrahayana, when the crops of the

Hemanta season are harvested. These crops (called baimana in Kautilya) were sown during the rainy season; they are still one of the two principal crops of the year known as kbarif, producing rice, pulses, seasamum, maize and millet. Pāṇini mentions such loans as āgrabāyaņika (also agrabāyaņaka, IV.3.50), which were to be repaid on Agrahayani, the Full-moon day of the month Agrahayana. It incidently shows that the month was reckoned to close on the full-moon day, for it would be natural to fix the period of repayment in terms of full and not half-months. We may thus understand how a dašaikādaša debt contracted in the month of Śrāvaṇa, to meet the expenses of sowing the rainy crop, with stipulation to be repaid on the Agrahayani day would be called pañchaka, on account of the interest-bearing period being five months.

The other important crop was vāsantika harvested in the spring season. This crop is now called rabi, with barley, wheat, and oil-seeds as its main produce. On account of its association with barley and its straw, the season itself was nicknamed yava-busa, and Pāṇini refers to loans due for repayment at this time of the year as yava-busaka (IV.3.48).

It appears that the ten-rupee loan referred to by Pāṇini in the phrase daśaikādaśa, became later the norm. By the time of Kātyāyana we find that dašārņa, a loan of ten rupees, had become a regular linguistic expression (VI.1.89.8;III.69). The ten-rupee loan still continues to be the basis of petty agrarian loans under the name of das-ke-barah (ten-fortwelve system). Kātyāyana also mentions special loans like vatsatarārna 'contracted for purchasing a young bull'; kambalārna, 'loan for buying a blanket of standard size', which according to Păṇini was manufactured out of a kambalya measure (five seers) of wool; and vasanārņa, loan for buying cloth. We should understand vasana as a cloth of standard measurement, weight and price so that it could be used as a unit of exchange in such transactions as envisaged in sūtra

V.1.27 (purchased for one vasana). Vasana was most likely the standard śāṭaka cloth mentioned by Patañjali as costing, one kārshāṭaṇa each (V.1.21; II.346).

were six special forms of interest, viz. compound interest, periodical interest, stipulated interest, corporeal interest, daily interest, and use of a pledged article (Gautama Smriti, XI.34-35). Of these Pāṇini knows of periodical interest as in dašaikādaša; stipulated interest as in paūchaka, saptaka; compound interest as in pravriddha (VI.2.38); and use of pledged article as in IV.4.89. A reference to corporeal interest may be traced in sūtra II.3.34 (Akartary-rine paūchamī) intended to regularise the formation of such linguistic expressions as śatād baddhah, i.e. 'bound for a debt of one hundred'. We know it from Kautilya that free persons pledged or mortgaged themselves to repay debts contracted by them; this custom was also known in Pāṇini's time.

USE OF A PLEDGE—Pāṇini knows of this form of interest in sūtra IV.4.89, which refers to dhenushyā, as a cow whose milk was pledged to the creditor for satisfaction of the loan advanced by him (yā dhenur-uttamarṇāya riṇaḥradānād doba nārtham dīyate sā dhenushyā, Kāsikā).

MAHĀ-PRAVRIDDHA—(VI.2.38). Pāṇini has cited the formation mahā-pravriddha for its particular accent. But the word denotes the limit of interest (vriddhi) allowed on a loan. Manu says that the maximum accumulated interest should not exceed the principal sum (VIII.150). Kautilya directs that if the interest is allowed to pile up owing either to the absence abroad of the creditor or debtor, or deliberate intention, the amount payable shall be equal to twice of the principal sum (mūlya-dviguna, Artha. III. 11, p. 174). This is also endorsed by Sukra stating that the debtor shall not be required to pay more than twice the principal sum in discharge of his debt and interest (IV.5.631-2). Thus the maximum limit of accumulated interest was a sum equal to the principal; and

when the original amount of loan, say a hundred kārshāpaṇas, had by the adding to it of compound interest (pra-vriddba) increased to two hundred kārshāpaņas, the loan was considered to have reached its maximum increment (mahā-pravriddha). APAMITYAKA (IV.4.21).-Pāṇini mentions apamityaka as something borrowed with a view to be returned in kind (vyatibāra, III.4.19). The term is explained by Kautilya as applicable to grain borrowed with a promise to return an equal quantity (Arth. II.15, p. 94). The use of this word in connection with the borrowing of grain was as old as the Atharvaveda: Whatever grain I have borrowed for eating, may I return to redeem my debt' (Apamitya dhanyam yaj-jaghas-aham idam tadagne anrino bhavāmi, VI.117.8). The apamityaka arrangement was a well-recognised practice of rural economy, with a very ancient origin. Kautilya refers in the same context to prāmityaka, i.e. grain borrowed, but without obligation to return (sasya-yāchanam anyatah prāmityakam, Arth. II.15). Pāṇini mentions this as yāchitaka (Apamitya-yāchitābhyām kak-kanau, IV.4.21).

#### CHAPTER V

## EDUCATION, LEARNING AND LITERATURE

## SECTION 1. EDUCATION

Pāṇini's grammar was the outcome of a considerable development of language and literature. That linguistic and literary development was in its turn the product of a suitable educational system amply justified by its results. The Ashṭādhyāyī throws valuable light on the evolution of different literary forms and types of compositions, educational institutions, students and teachers, methods of instruction, subjects of study, and works then known—a fact of great importance for the literary history of ancient India. Patañjali supplements Pāṇini's information in many ways.

STUDENTSHIP-The educational system was based upon what is known as the ancient system of Brahmacharya (Tadasya brahmacharyam, V.1.94) which laid more emphasis on life (charyā) than mere learning or instruction. It was based upon a constant personal touch between teacher and pupil bound together by a spiritual tie (vidyā-sambandha; IV.3.77) living in a common home (śālā). The pupil was thus truly the antevâsī (IV.3.130) of his āchārya. A student was generally called Brahmachari (Charane Brahmacharini, VI.3.86). The religious student belonging to the upper three classes of society was known by the special term varni (V.2.134), a new title unknown in the Samhitā and Brāhmaņa literature. As a pupil, he was called chhātra (IV.4.62, Chhatrādibhyo nah), because his duty (chhatrain sīlamasya) was to be always at his teacher's service (guru-kāryeshv-avahitah) and protect him from harm like an umbrella (tach-chidrāvaraņa-pravrittah, Kāšikā).

Two classes of pupils are distinguished (1) danda-māṇava,

and (2) antevāsī (Na daņḍamāṇavāntevāsishu, IV.3.130). The daṇḍa-māṇava, also called by the shorter name māṇava (VI.2.69) was a novice, not initiated in the Vedic study (anticha), as observed by Patañjali (anticho māṇava Bahvrichaś-charaṇākhyāyām-iti, V.4.154; II.444). He was named after his distinctive emblem, a wooden staff which he carried (daṇ-ḍa-pradhānah māṇavaḥ, Kāśikā). Pāṇini mentions the religious staff of the student as āshāḍha (V.1.110), being named after the wood of the palāśa tree (Butea frondosa) of which it was made. The Tattvabodhinī, a late commentary, takes daṇḍa-māṇavas to be students without upanayana. The Mataṅga Jātaka refers to a māṇava as being of tender age (bāla), moving to and fro with a daṇḍa and wearing sandals (Jāt. IV.379). A class of such young pupils was called māṇavya (IV.2.42).

Students initiated by teachers of the rank of an āchārya, were called antevāsins. Pāṇini calls the ceremony of initiation as āchārya-karaņa (I.3.36). This was expressed by the formula manavakam upanayate. He brings the pupil close to himself as his 'Achārya'. This is further explained by the Kāśikā as ātmānam āchāryīkurvan-māņavakam ātmasamīþam prāpayati, 'converting himself into a teacher he draws close to himself the tender youth as his pupil'. The antevāsin was thus the Brahmachārī proper, wearing a particular uniform consisting of a deer skin (ajina, VI.2.194) and a kamandalu (IV.1.71). Patañjali refers to a student marked by the kamandalu in his hand (kamandalu-pāni chhātra, I.347), getting food offered by pious families (I.133, yājyakulāni gatvā agrāšanādīni labhate). An antevāsī Brahmachārin was considered to be a full-fledged member of his school called Charana, and this bond of comradeship applying in common to all fellow-students was expressed by the phrase sa-brahmachārī (VI. 2.86).

THE PUPIL'S DUTIES—The Brahmachārī was bound to his teacher by a spiritual relationship (vidyā-sambandha, IV.3.77),

not less real than blood relationship (yoni-sambandha). Pāṇini refers to the teacher as anūchāna, 'one who expounds the texts' (III.2.109), and also pravachaniya, 'one who orally imparts instruction' (III.4.68, pravachaniyo guruh svādhyāyasya, Kāśikā); and the pupil as śuśrūshu, 'one who intently listens to the words of his teacher' (I.3.57; III.2.108). They were always close to each other (upasthānīya, III.4.68), the teacher to be served (upasthānīyah sishyena guruh), and the pupil to be taught (upasthānīyo' ntevāsī guroh, Kāśikā). Sometimes the father acted as teacher to his son, the pupil being then called pitur-antevāsī (VI.3.23). Pāņini refers to āchārya-putra along with rāja-putra and ritvik-putra (VI.2. 133), all three standing on the privileges of their fathers. The teacher's son was for the pupils like the teacher himself (Kātyāyana, guruvad guru-putra iti yathā, I.1.56.1; Bhāshya, L.133).

TEACHERS-Pāṇini mentions the following classes of teachers: (1) Āchārya, (2) Pravaktā, (3) Śrotriya, and (4) Adhyāpaka (II.1.65). The Āchārya was of the highest status. By the particular religious ceremony of upanayana, he became āchārya (āchārya-karaņa, 1.3.36), and the student his antevāsī. This was expressed in the language as mānavakam upanayate. The Atharvaveda puts it clearly thus: 'the āchārya by drawing the pupil within himself as in a womb, gives him a new birth' (āchārya upanayamāno Brahmachārinain krinute garbhamantah, XI.5.3). The close association of a teacher and his pupil is shown by the practice of naming the pupil after the āchārya. This is expressed by Pāṇini in the sūtra Āchāryopasarjanaś-chāntevāsī (VI.2.36; VI.2.104), 'the antevāsī is known after his teacher', e.g. Apisala, Pāṇinīya, the pupils belonging to the schools of Apisali and Panini. Such founders of Schools distinguished as āchāryas, e.g. Āchārya Sākaṭāyana, Achārya Pāṇini, represented the highest academic degree and distinction.

Pravaktā: The pravaktā appears to be a teacher who was an exponent of the traditional sacred texts, or prokta literature, under the general direction of an āchārya. The three classes of teachers, pravaktri, śrotriya and adbyāpaka, in sūtra II.1.65, seem to be mentioned in the order of their precedence in the educational system.

Śrotriya: Pāṇini defines a śrotriya teacher as one who could recite the Chhandas or Veda (Śrotriyamś-chhando' dhīte, V.2.84). He specialized in committing to memory the Vedic texts in the various forms of recitations (pāṭha), as samhitā, pada, krama, etc. The literary apparatus for conserving the Vedic texts without change of a syllable or accent had been perfected several centuries before Pāṇini, who mentions students called kramaka, who specilized in memorising the krama text (IV.2.61), and padaka, the pada text of the Vedas. Teachers who instructed such pupils were themselves named after the mode of recitation they had mastered (tad-veda), e.g. kramaka, padaka, 'knowers of the krama and pada texts.'

Adhyāpaka: The adhyāpaka (II.1.65) seems to have been a teacher entrusted with the teaching of secular and scientific treatises, whose later designation upādhyāya is often mentioned in the Mahābhāshya.

DISAPPROVED PUPILS—Several terms express the censure attaching to students who misused their privileges or contravened the rules proper for them, e.g. tīrtha-dbvānksha, tīrtha-kāka, 'fickle as a crow' in changing his teachers and schools too frequently (II.1.41 with Bhāshya I.391, yo gurukulāni gatvā na chiram tishthati sa uchyate tīrtha-kāka iti); khaṭv-ārūḍha, 'a pupil who takes to the luxury of a householder by sleeping on a cot', (Khatvā kshepe, II.1.26).

In sūtra VI.2.69 (Gotrāntevāsi-māṇava-Brāhmaṇeshu kshepe) Pāṇini refers to both junior (māṇava) and senior (antevāsī) students who joined their schools under motives deserving of censure, e.g. bhikshā-māṇava, 'a novice attracted to the school for its benefit of free boarding' (bhikshām lap-

sye' bamiti māṇavo bhavati, Kāsikā). The Vālmīki Rāmāyana refers to the māṇavas of the Katha-Kālāpa Schools as running after delicacies of food (svādu-kāmāh) given to laziness
(alasāh), and avoiding due service to the teacher under pretext of study (Ayodhyākāṇḍa, 32.18). As instances of elderly students joining the teacher with such malafide motives,
Patañjali cites kambala-Chārāyaṇīyāh, pupils joining the
school of Chārāyaṇa with an eye on its blankets; odana-Pāṇinīyāḥ, pupils joining the school of Pāṇini for its worldly advantages, such as provision of rice; ghṛita-Rauḍhīyāḥ, pupils
joining the school of Rauḍhi for its provision of butter (Bhāshya I.1.73; I.190). To these examples, the Kāšikā adds a
worse case, e.g. kumārī-Dākshāḥ, pupils joining the school
of Daksha for its access to girls (as co-students).

In the above examples Chārāyaṇa is cited by Kauṭilya as an ancient author of Arthasāstra, and may be identified with the great minister of king Prasenajit of Kosala. Similarly Rauḍhi was a junior contemporary of Pāṇini himself, as shown by the example Pāṇinī ya-Rauḍhī yāḥ, in which the names are cited in a chronological order (Kāsikā, VI.2.36; also Bhāshya, IV.1.79; II.233).

NAMING OF STUDENTS—Students derived their names from three factors, viz. (1) name of the subject, or treatise of study (tadadhīte); (2) name of the Vedic School (charana) to which they belonged; and (3) name of the teacher under whom they were studying, or whose works they studied.

As examples of (1) Pāṇini mentions yājñika (IV.3.129) and vaiyākaraṇa (VI.3.7), 'students of the sacrificial ritual and grammar' respectively. Amongst other students taking up special courses, Pāṇini refers to students of Kratu or Soma sacrifices (IV.2.60), e.g. Āgnishṭomika, Vājapeyika (Kāśikā); and to students specialising in the Anubrāhmaṇa literature and thence called Anubrāhmaṇā (IV.2.62); and others devoted to Vedic recitation such as Kramakāḥ, Padakāḥ mentioned above (IV.2.61).

Students were also named after the special seasonal courses which they were pursuing. For example, the books that were taken up for study in the Vasanta (spring) season were also known as Vasania, and the student who was reading that treatise or course at the assigned time was classed as Vāsantika (Vasantādibhyash-thak, IV. 2. 63, vasanta-sabacharito'yani grantho vasantas-tam adhite). We learn from the Smritis that the vasanta session in colleges was inaugurated on the Vasanta-pañchamī day in the month of Māgha, and the course mainly consisted of Vedanga texts (Manu, IV.98). Courses were similarly offered for the other seasons like Varshā, Śarad, Hemanta and Śiśira, and the students of these short term courses were then called Vārshika, Śāradika, Haimantika and Śaiśirika (Gana-pātha to IV.2.63). These seem to be planned on the lines of modern Summer schools.

NAMING OF VEDIC STUDENTS-Students were called after the names of the Chhandas works then studied in the different recensions or Śākhās, in the Vedic schools (charanas). According to Pāṇini the names of Chhandas works and the Brāhmaṇa texts attached to each Śākhā were not used as current except with reference to the students or persons learned in them (Chhando-Brahmanāni cha tadvishayāni, IV.2.66, under the context Tadadbite tadveda). The grammatical form undergoes a double process. For example, the original teacher (pratyaksha-kārī, IV.3.104.1) Katha was the promulgator of a Chhāndasa Śākhā text. The relationship between Katha and his work was first expressed by a suffix taught under Tena proktam (IV.3.101). To the word thus formed was added a second suffix to denote a student studying that text. In practice the second affix denoting the student was elided (Proktāl-luk, IV.2.64), with the result that the name of the Śākhā and the name of the Brāhmaņa work always pointed to the students studying them. This position is emphasized by the fact that the names of Vedic texts could not be used alone except in relation to their students, e.g. Kathah, the students

of the Katha Śākhā, promulgated (prokta) by the teacher Katha (Kathena proktam adhiyate). The word Katha which ordinarily should have been the name of the book was reserved to denote the entire body of those students and teachers who devoted themselves to its study (adhīyāna) and attained proficiency therein (tad-veda). The Kathas stood for a real school. The same principle of naming held good for hundreds of other Vedic Śākhās or Samhitās and Brāhmaņas, which had then become established for long not merely as books, but as institutions with a fellowship of teachers and pupils devoted to their study. This is the main purport of the important sūtra Chhando-Brāhmaṇāni cha tadvishayāni. The text of a Vedic Śākhā would grow into a living institution and spread into offshoots claiming numerous teachers and students within its fold. The original teacher was the nucleus round whom there grew up an appropriate literature of exposition like the Brāhmaņas, to which contributions were made by teachers and pupils of successive generations, expanding their literary heritage. The Charana began as an educational institution following a particular Śākhā text; in course of time it developed its full literature comprising Brāhmana, Āranyaka and Upanishad texts, Kalpa or Śrauta Sūtras (cf. Purāna-prokteshu Brāhmaņa-Kalpeshu, IV.3.105), and later on even its Dharmasūtra to which Pāṇini refers in the sūtra Charanebhyo Dharmavat (IV.2.46). This represented its normal evolution, but there were many subsidiary schools confined to one or more classes of texts, and justifying their activity by even a Sūtra text (sūtra-charaṇa). A good number of the names of these Vedic schools, or, which is the same thing, of their students, are preserved in the Ashtādhyāyī, constituting a rich record of the Vedic literature existing before Pāṇini, which will be noticed later.

Under the third category were scholars studying the newly discovered scientific treatises, and thus known after the names of the teachers who had composed them (IV.2.64).

For example, Śākaṭāyaṇa and Āpiśali were two great Āchāryas who lived before Pāṇini. They were the founders of different grammatical systems named after them, e.g. Apisala, the work of Apiśali, whose students also were called Apiśalas. Although the mode of indicating the students of such secular works, was grammatically identical with that for the students of Chhandas works, the fact is that such names as Śākaṭāyanīya and Păṇinīya, as applied to a student, indicated his allegiance to one particular study, rather than to a broad literature such as that of a Vedic school. From the point of view of educational organisation the Charanas were the larger schools promoting the study of the entire Vedic literature and based on a fellowship of teachers and pupils, as distinguished from the more restricted grammatical schools confined to the study of a particular treatise or branch of learning and functioning independently of the Charanas.

EDUCATION OF WOMEN-Both Pāṇini and Patañjali refer to women admitted to Vedic study in the Charanas. The term jāti in sūtra IV.1.63 (Jāter-astrī-vishayād-ayopadhāt) includes the female members of gotras and charanas (gotram cha charanani cha, Bhashya II.225). Thus a woman student of the Katha school was called Kathi, and of the Rigvedic Bahvricha school Bahvrichi. It appears that the three principles of naming the male students applied equally to the female students also. For example, Kātyāyana and Patañjali refer to Brāhmaņa women students studying the grammatical system of Apisali and thence called Apisala Brāhmanī (Pūrvasūtra nirdešo vāpišalam adbīta ili, IV.1.14, vār. 3). Kātyāyana here refers to a rule of a previous writer, in all probability Apiśali himself. Similarly Paniniya Brahmaņī (Kāsikā on IV.2.64). Female students were also admitted to the study of Mīmāmsā, e.g. Kāšakritsnī, a female student studying the Mīmāmsā work of Kāśakritsni, son of Kāśakritsna (Bhāshya, 11.206). Pāṇini refers to female students as Chhātri and their hostels chhātri-śālā (VI.2.86). The wife

of an āchārya is referred to as āchāryānī (IV.1.49), but āchāryā was the title of female teachers corresponding in status to an āchārya (counter-example in the Kāśikā). Patañjali refers to the female teacher Audameghyā and her pupils (IV.1.78; II.230). The term Kathī-vrindārikā, the foremost female student of the Katha Śākhā, points to the success of women as students of Vedic schools. Patañjali refers to a female student as adhyetrī and a female novice as māṇavikā (IV.193; II.249).

SCHOOL REGULATIONS—The antevāsī was to lead the life of a regular Brahmacharī in the house of his teacher. Special hostels for female students had also come into existence

(chhātri-śālā).

Pāṇini refers to the working days of the school as adhyāya (III.3.122; adhīyate' sminn-ityadbyāyah, Kāśikā). On this etymology was based the opposite word anadbyāya denoting holidays, about which elaborate instructions are given in the Gribya-sūtras. These rules are anticipated in Pāṇini's sūtra, Adhyāyiny-adeśa-kālāt (IV.4.71), showing that study was to be suspended outside its time and place. It is significant that Pāṇini should have found it necessary to mention students contravening the proper rules by carrying on their study in unapproved places, on which the Kaśikā cites śmāśānika, chātuspathika, 'one who reads in a cremation-ground or a market-place', and on non-working days, e.g. chāturdašika, āmāvāsyika, i.e. studying on Chaturdasī and Āmāvasyā days which were set apart for religious purposes like the Darša-Paurņamāsa and not for study (Kāśikā on IV.4.71). The opprobrium implied in these terms lasted only for the time being.

Students belonging to the same school were called sabrahmachārins (Charane Brahmachārini, VI.3.86), and those studying under a common teacher satīrthya (Samānatīrthe vāsī, IV.4.107 and VI.3.87, Tīrthe ye; Kāšikā, samānopadhyā-

ya).

In schools following varied curricula, some kind of grouping in the form of classes was inevitable. This grouping was of two kinds: firstly, grouping of such students as were studying the same subjects, and secondly forming bigger congregations of such different groups occasionally for some common purpose provided their subjects of study were allied (Adhyayanato prakrishtākhyānām, II.4.5). For example, Pāṇini mentions students of the Krama-pāṭba forming the class Kramakāh, and of the Pada-pātha Padakāh (Kramādibhyo vun, IV.2.61). Instruction in Pada-recitation immediately preceded that of Krama-. The two classes functioned separately in the school-routine, but on special occasions were grouped as a joint class called Padaka-Kramakam, a compound name in singular number. For a common social programme like feasting, the teacher would direct the two allied classes to go together, e.g. Padaka-Kramakam gachchhtu, i.e. 'Let the Padaka and Kramaka students go'. The Kāšikā cites Kramaka-Vārttikam, showing that after completing the Krama recitation of the Veda, the students took up Vritti or grammatical lessons. Patañjali also states that in his time the custom was for students to be trained first in Vedic recitation; the study of grammar therefore must have followed.

GRADATION OF COURSES-The grouping of classes as shown above points to a system of planned courses. The various categories of students like mānava (the novice), antevāsī (the full-fledged Brahmachari), and charaka (the advanced visiting scholar, IV.3.107) and of teachers like adhyapaka, pravaktā and āchārya, point to different stages in the academic career.

Pāṇini has noticed the linguistic forms indicative of stages in academic progress. The stages of secular studies were expressed in terms of the particular treatise studied (Granthanatādhike cha, VI.3.79), e.g. 'studies the science of astrology upto the chapters Kalā and Mubūrta, sakalam, samuburtam jyautisham adhite; or reads grammar upto the treatise called

Sangraha (sasamgraham vyākaranam adhīte, Kāsikā). The completion of a course is indicated by the term anta-vachana (II.1.6), i.e. study upto its concluding chapter, for which older examples were, sāgni adbīte, 'he completes his studies upto the text called Agni (Books V-IX of the Satapatha Brāhmana dealing with the Fire ritual); or seshti-pasu-bandham, upto the text called Ishti (Books I-II of the Satapatha dealing with the Ishtis or New and Full-Moon sacrifices), and Painbandha (Books III-V of the Śatapatha, dealing with the Soma sacrifices). Completion of a particular topic of study was called vritta (VII.2.26, Neradbyayane vrittam); e.g., in reply to the question 'How much has Devadatta read?', it was stated: Vritto guno Devadattena, Vrittam pārāyanam Devadattena, Devadatta has finished the study of the topic called guna (i.e. strengthening of vowels in grammatical formations); or pārāyana (Vedic recitations). Two linguistic forms were current to indicate the progress of studies, either by topics or the prescribed books completed.

As already stated (IV.2.63), the syllabus for the year was divided according to the seasons. A particular course of study was prescribed for each season, and the studies associated with each were named after it, e.g. Vasanta, 'Spring Lectures', Grīshma, 'Summer School', Varshā, 'Monsoon Lectures', Śarad, 'Autumn Lectures', etc.

The system of short term courses involving a study of special topics or parts of a subject was also in vogue, as implied in the expression Tadasya brahmacharyam (V.1.94). It regulates the names of students according to the period for which they had got themselves admitted e.g. māsika Brahmachārī, a student for a month; similarly ardha-māsika, a student for half a month, and sāmvatsarika, a student for one year (Kāśikā). Kātyāyana mentions mahānāmnika students, those who restricted themselves to the study of mahānāmnī verses (Mahānāmnyo nāma reho vratam tāsām charyate, Bhāshya II.360); similarly ādityavratika, a student of

Adityavrata. The Gobbila Gribyasūtra refers to these special vows of studentship (III.1.28; III.2.1-9). The Mahānāmni vow was alternatively called Śakvarī vrata. According to the Rauruki Brābmaṇa, the Mahānāmnī verse was regarded as the highest religious study aimed at by students in that ancient system. The mothers wished their new-born babes: 'O darlings, may ye complete the vow to master the Śākvarī verses!'

The completing of study was called samāpana (Samāpanāt-sapurvapadāt, V.1.112), e.g. chhandaḥ-samāpanīya, vyākaraṇa-samāpanīya, studentship with the avowed object (prayojana) of mastering prosody or grammar.

PEDAGOGY—The teacher expounding a subject was called ākbyātā. Tution in the prescribed religious manner was upayoga (niyama-pūrvakam vidyā-grahaṇam, Kāšikā on I.4.29). According to the commentator learning of secular subjects as dramatic art did not come under the category of upayoga, e.g. 'takes instruction about drama from an actor' (naṭasya ṣṛṇṇoti). The teacher in his capacity of expounding to his pupil the religious texts of svādhyāya was called pravachanīya (III.4.68, pravachanīyo guruḥ svādhyāyasya). This term was also applied to the subject expounded as pravachanīyo guruṇā svādhyāyaḥ. This has reference to the teacher mentioned by Pāṇini as pravaktā (II.1.65). Pāṇini refers to another class of teachers called ānūchāna (III.2.109), who according to Bodhāyana discoursed on the Vedāṇgas (aṅgādhyā-yā anūchānaḥ, Bodhāyana Grihyasūtra, I.4).

Preparations for study with a teacher were called anupravachaniya (V.1.111). A teacher was respectfully approached (adhīshṭa) by the father or guardian with request to undertake the instruction of his ward: 'I pray that you be pleased to admit this tender youth to your instruction' (adhīchchhāmo bhavantain māṇavakain bhavān uḥanayet,

<sup>&</sup>lt;sup>1</sup> अब ह रौरुकि ब्राह्मणं भवति । कुमारान् ह व मातरः पाययमाना आहुः शाक्वरीणां वर्तं पारियण्णवो भवतेति । गोभिलगृह्मसूत्र, III 2-7-9

Kāšikā on III. 3. 161). The teacher was named after the period of his instruction (tam adhīshṭaḥ, V. 1. 80), e.g. māsiko adhyāpakaḥ, 'teacher for a month' (māsam adhīshṭaḥ satkṛitya

vyāpāritah).

The life of the student was subjected to rigorous discipline. The difficulty of study is referred to in such expressions as kashto' gnih, kashtam vyākarnam, tatopi kashtatarāni sāmāni, 'hard to master is the Fire ritual (Śatapatha, Bks. VI-IX); so is Grammar; but still more difficult are the Sāman songs' (Kāšikā, VII. 2. 22).

It is interesting to read in the Ashṭādhyāyī about teachers who were strict relentless disciplinarians (dāruṇādhyāpaka, ghorādhyāpaka). As against them were teachers described as perfect (kāshṭhādhyāpaka) and good (svādhyāpaka) (Pūjanāt būjitam anudāttam kashṭhādibhyaḥ, VIII.1.67). Retired teachers were called prāchārya and Old Boys prāntevāsī

(Bhāshya, II.2.18; I.416).

PĀRĀYAŅA (VEDIC RECITATION)—The method of study varied with the nature of its subject. Vedic texts had to be learnt by repetition; the master of such texts was called a Śrotriya (V.2.84). Recitation of Vedic texts without attending to meaning was called pārāyaṇa; one engaged in such study was called pārāyaṇika (pārāyaṇaṁ vartayati, V.1.72). Students gifted with strong memory so as to learn the text by heart without effort (akrichchhra) were indicated by such expressions as adhīyan pārayaṇaṁ, 'facile in recitation', dhārayan Upanishadam, 'memorising the Upanishad' (In-dhāryoḥ śatrakrichchhrini, III.2.130).

There are several sūtras relating to details about recitation. Firstly, there is provision to indicate the number of repetitions (adhyayana) required to memorise the text (V.1.58), e.g. paūchaka adhyayana, reciting (āvritti) a text five times, repeating its words five times (Paūcha vāra), and in five ways (paūcha rūpa, Kāśikā); similarly saptaka, ashṭaka, navaka referring to higher numbers. Second-

ly, there were appropriate phrases to express faults in recitation, by way of an individual word pronounced wrongly (padani mithyā kārayate), or accents in a faulty manner (svarādi dushtam), and repeating the mistakes (asakrit uchchārayati; Mithyopapadāt kriño' bhyāse, I.3.71). Finally, students were tested with reference to the number of mistakes committed in recitation (Karmādhyayane vrittam, IV.4.63-64), aikānyika, i.e. one who at the time of examination (parikshā-kāle) commits one mistake (Kāšikā); similarly dvaiyanyika, traiyanyika, and so on up to ten. The Sanskrit words for numerals up to ten consist of two syllables. But Pāṇini also teaches the manner of indicating the lapses when the numeral is of more than two syllables (bahvach, IV.4.64), e.g. dvādašānyika, trayod išānyika, chaturdašānyika, one with 12, 13, or 14 mistakes in recitation. This method of oral teaching and committing texts to memory has amply justified itself by the conservation and transmission of India's sacred learning through the ages before it was stored up by writing in manuscripts. The secret of success of this oral tradition (sruti) lies in the faith that sacred words by themselves have a value and should be treasured up in memory as abiding stores of knowledge.

Strict regulations characterised the pārāyaṇa of Vedic texts by pārāyaṇika students observing the vow (pārāyaṇaṅi vartayati, V.1.72). Naturally a particular mode of recitation was selected at one time, such as sambiṭā-pārāyaṇa (nirbhuja), pada-pārāyaṇa (pratṛṇṇa) and krama pārāyaṇa. Each school had carefully computed the extent of its Vedic text for the purpose of pārāyaṇa; the Charaṇavyūha-pariśishṭa of Saūnaka states the pārāyaṇa text of Rigveda to comprise 10,580 verses (I.10).

The student commenced the pārāyaṇa with a formal ceremony described in the Gribya texts of Bodhāyana and others. He slept on a platform (sthaṇḍila) as part of his vow, for which he was marked as sthāṇḍila (Sthāṇḍilāch-chhayitari vrate, IV.2.15). He also observed the vow of silence during

pārāyaṇa, being then known as vāchaṇyama (vāchi yamo vrate, III.2.40). He was also to restrain himself in the matter of food, eating sparingly and taking only water, milk or fruits according to his physical endurance, e.g. if he took only milk he was spoken of as payo vratayati (III.1.21), 'observes the vow by living only on milk'. Besides the above regulations Mahidāsa hints at the fact that students often undertook repeated courses of pārāyaṇa recitation, and the Kāšikā mentions dvaipārāyaṇikaḥ as an illustration (IV.1.88). Pārāyaṇa could also be observed in later life.

INTELLECTUAL APPROACH—This mechanical method of learning by rote gives only a limited picture of the educational system. Yāska sounds a note of protest against too much emphasis being laid on mere memorising of words as means of learning, and Patañjali compares it to dry fuel thrown in a place where there is no fire to ignite it (Bhāshya I.2.). Pāṇini's own work the Ashṭādhyāyī was the result of much hard and scientific thinking applied to the study of words and their significance by analytical methods. The Nirukṭa of Yāska and the grammatical works of Śākaṭāyana and Āpišali were similar products of the scientific mind. The original treatises produced as a result of creative intellectual activity are distinguished by Pāṇini as upajñāta and as being different from the commentaries or expositions (vyākhyāna) of older texts.

Pāṇini uses a number of terms to indicate the various methods employed in learning and education, e.g. extempore composition at the spur of the moment (prakathana, I.3.32); illuminating interpretation (bhāsana, I.3.47); true exposition of knowledge (root vad in the sense of jñāna, I.3.47, samyagavabodha); presentation of divergent opinions (vimati, I.3.47, vipralāpa, I.3.50); enunciation of one's doctrines (pratiŝra-

<sup>&</sup>lt;sup>1</sup> यदधीतमविज्ञातं निगदेनैव शस्त्रते । अनग्नाविव शुष्केषो न तज्ज्वलति कहिंचित ॥

vaņa, VIII.2.99; or pratijāāna, e.g. nityain šabdam samgirate, 'he affirms that word is eternal', I.3.52); seeking after knowledge (jijnāsate, I.3.57). All these terms are indicative of vāda (debate) and vivāda (discussion) as a method of learning and approach to truth. This method of education is amply testified to in the Upanishads and also in Buddhist literature. Again, Pāṇini also refers to judges at the time of disputations (madbye-kritya, I.4.76), silencing of an opponent (nivachanekritya, I.4.76) and restraining him by exposing his views (nigribya anuyoga, VIII.2.94), the words nigraba and annyoga being regular terms of Nyaya dialectics. Forms of language to arrive at the truth by the process of reasoning (vichāryamāṇānām, VIII.2.97; pramāņena vastu-parīkshaņam, Kāšikā), and firmly establishing one's own position (jñanam, prameya-nischayah, I.3.36) are also referred to. The person who came out triumphant in the debate was the recipient of high honours (sammānana, I.3.36), and he was from that time regarded as the leading exponent of that subject or school. As an example the Chandravritti mentions Panini himself as leading in the science of grammar (nayate Pāṇinir-vyākaraņe, I.4.82). Knowledge transmitted from teacher to pupil benefited by its expansion (tāyana, I.3.38) in the process. We know how the treatise of Panini himself was enriched by his brilliant successors Kātyāyana and Patañjali. Sometimes it so happened that founders of schools became known not so much by their own works as by those of their pupils or followers shedding lustre on them. Pāṇini himself mentions the names of Kalāpin and Vaišampāyana as teachers of this type whose discourses were so fruitful that they gave rise to different schools of thought, all within the domain of the subject-matter of those discourses (Kalāpi-Vaišampāyanāntevāsibhyascha, IV.3.104; Dr. R. K. Mookerji, Ancient Hindu Education as Revealed in the Works of Panini, Kātyāyana and Patañjali). CHARANA, THE VEDIC SCHOOL-Charana represents the type of educational institution in which one particular recension or Sākhā of the Veda was studied by a group of pupils called after the original founder and organized as a corporate body (charana-sabdah sākhānimittikah purusheshu vartate, Kāśikā, II.4.3). The various branches of sacred literature were developed under the aggis of the Charana organization, viz. the Chhandas text which was originally enounced by a Rishi, its Brāhmana embodying the liturgical, religious, and philosophical doctrines developed in relation to yajña, and later on the Kalpa works dealing with systematised sacrificial ritual better known as Śrautasūtra. This elaboration of literary types had gone on in the Charanas prior to the time of Pānini (cf. sūtras IV.2.66; IV.3.105). In fact different Vedic Śākhās and Brāhmana works were considered such an integral constituent of a Charana that they were thought of only in terms of the students who studied them and who actually constituted the Charana. The Śākhās no longer remained mere books, but developed into institutions comprising under their aegis such works as the Brahmanas, Aranyakas and Srauta-sutras, etc. Pāṇini speaks of a still wider basis, viz. the development of a new type of literature represented in the Dharmasutras (Charanebbyo dharmavat, IV.2.46; Charanad-dharmamnayayoh, Var. on IV.3.126). This marked a further stage in the evolution of the Charana, and also marked its final phase, because at the time as Dharma or Law was introduced in the curricula of a Charana many especialised branches of learning were coming into existence independently of and outside the organisation of the Vedic schools. The Nirukta of Yaska and the grammar of Pāṇini are examples of this later development. It is not possible to trace their association with one particular Vedic school. In fact we owe to Patanjali the significant statement made with regard to the Ashtādhyāyī that it was not attached to any particular Vedic school, but was claimed by all Vedic schools as their common study:

स विदेपारिषदं हीदं शास्त्रम् । (П.1.58; І.400; VI.3.14;ПІ.146).

PARISHAD-Three varieties of Parishads were known to Păṇini, (1) academic, (2) social and (3) administrative. The first kind of Parishad was an academy of specialist scholars within the Charana whose function was to fix the Sākhā text to be adopted by the Charana with special reference to its phonetical and grammatical points. Pāṇini refers to the Charaņa-Parishad in sūtra IV.3.123 (Patrādhvaryn-parishadaś-cha) regulating the term parishada to denote something that appertained to a parishad (parishadah idam). The Acharya along with his academy (saparishatka āchārya) greeted the student on his first admission (यक्षमित्र चक्षुयः प्रियो वा भूयासमिति सपरि-परकमाचार्य मेम्येत्य ब्रह्मचारी पठति, Gobbila Gribyasūtra, III.4.28; Drāhyāyana Gribya. III.1.25). Charaka records full details of an academic Parishad (Vimānasthāna, VIII.19-20). Patañjali mentions pārishāda as a work which was the product of a Vedic Charana (cf. Sarva-Veda-Pārishadam, quoted above). Its earlier variant in the Nirukta was Pārshada which Yāska mentions as works composed in the Charanas (pada-prakritini sarva-charananam parshadāni, Nirukta, I.17). Patanjali also gives the form pārshada for Pānini's Pārishada works of the Sātyamugri and Rāṇāyanīya schools of the Sāmaveda (Bhāshya, 1.22). As Durgāchārya explains, the Pārshada works were the Prātisākhyas produced in the parshad (=parishad) of each Charana, and dealing mainly with phonetical and grammatical topics.

There were two other kinds of parishads, viz. social and administrative. The term pārishadya, for a member of a parishad (parishadam samavaiti, IV.4.44) indicates that the parishad was a social or a cultural club, something like a samāja. The third kind of Parishad was an administrative body, as in the expression parishadadvalo rājā (V.2.112), 'a king governing with his council of ministers The term pārishadya, one eligible (sādhu) for membership of a parishad (Parishado nyah, IV.4.101) takes the parishad in the sense of an administrative body. The fact remains that originally the parishad began as

a body of scholars inside the Vedic schools, which influenced and directed their literary activities and helped in the evolution of those schools.

WORKING OF A CHARANA—Pāṇini throws light on the activities and constitution of Charanas with reference to the following points:

(1) Name-As already pointed out, the name of a Charana was also the name of the students who constituted it. There were two stages in the formation of these names which may have represented actual stages in the evolution of a Charana. First came the founder Rishi who gave the Charana a text as its basis (IV.3.102). Next, the Vedic text attracted to the school students who sought its study. For example, Rishi Tittiri promulgated the Taittiriya Śākhā, of which the students were also called Taittiriyas (Tittirinā proktam adbīyate). Grammatically, the term Taittiriya in the sense of a text (Tena proktam, IV.3.101-102) could not be used by itself; it needed another suffix to indicate its students (Chhando Brāhmanānī cha tad-vishayāni, IV.2.66), but this second suffix did not appear in the formation (Proktal luk, IV.2.64). In practice the word denoting the text did not differ in form from the word denoting its students. It is a curious phenomenon that in forming the names of Charanas, the first suffix denoting the text (prokta) was retained but lost its meaning, whereas the second suffix denoting the students and professors (adhyetri-veditri) was dropped but retained its meaning. It may well be that Pānini was here summarizing an actual position so as make theory and practice accord with each other. It was the case of an institution deriving its name from the founder, but later signifying the body of scholars and students who belonged to it.

The names of the Charanas in the Ashtādhyāyī and its Gaṇā-pātha are shown later.

(2) Rise (Udaya) and Expansion (Pratishthā)—A Charana was not necessarily bound to a place. For instance,

the Katha and Kālāpa Charaņas spread from village to village by their popularity, as Patañjali informs us (Grame grame Kāthakam Kālāpakam cha prochyate, IV.3.101; II.315). Pāṇini mentions that the compound names of Charanas were used in singular when anuvāda, 'restatement', was implied (Anuvāde Charanānām, II.4.3). The Kāśikā says that anuvāda is repetition of an already well-known fact (pramāṇāntrāvagatasyārthasya sabdena samkīrtana-mātram anuvādah). Kātyāyana explains that the linguistic forms intended by Pāṇini anticipated only the roots stha and in in past tense. For this Patañjali cites the forms udagāt and pratyashthāt, referring to the rise (udaya) and expansion, (Pratishtha) of two Charaņas jointly, like Katha-Kālāpa, Katha-Kauthuma, Mauda-Paippalāda (Bhāshya, II.4.3; I.474). A person who already knows the fact of the spread of these schools remarks in the course of conversation, 'The Katha-Kālāpa Charaņas have made such progress and have established themselves so well'. This statement was of the nature of an anuvada, i.e. restating what was already a known fact about the popularity of these two schools. The Vedic schools were expanding both geograpically and in their scholarly activities, or subjects of learning included within their fold, which is the background of the present sūtra.

(3) Anuvāda (Literary Collaboration)—This term annvāda is different from the term discussed above. The sūtra
Anorakarmakāt (I.3.49) contemplates some kind of literary
collaboration in the matter of recitation amongst different
Vedic schools; e.g. anuvadate Kaṭḥaḥ Kālāpasya, anuvadate
Maudaḥ Paippalādasya, i.e. the Kaṭha school follows the
method of the Kālāpa school in recitation (yathā Kalāpo'
dhīyāno vadati tathā Kaṭhaḥ, Kāśikā). The Kaṭha and Kālāpa
were related to the Kṛishṇa Yajurveda and the Mauda and Paippalāda to the Atharvaveda. This example points to intellectua!
co-operation between different Charaṇas of the same Veda.
Pāṇini names some Charaṇas as forming a collective unit, e.g.

Katha-Kālāpāh, Katha-Kauthumāh, Kauthuma-Laugākshāh Mauda-Paippalādāh (Kārta-Kaujapādayascha, VI.2.37). Such union of Charaņas must have been due to their cultural affinity, or geographical proximity.

(4) Enrolment—The Charanas were open to admission of students, which Pāṇini mentions as tad aveta, 'gets admitted to it' (V.1.134), e.g. Kāṭhikām avetaḥ, 'has become a member of the Katha Charana', or as the Kāšikā explains it 'obtained the fellowship of the Katha school' (Kaṭhatvam prāptaḥ).

The Katha Charana as a corporate body (Charana-samūha), was called Kāṭhaka, 'the corporation of the Katha scholars' (Kaṭhānām samūhah, Charanebhyo dharmavat, IV.2.46).

- Charana as their alma mater were called sa-Brahmachārins (Chanane Brahmachārini, VI.3.86). Academic fellowship had a social significance. Yājñavalkya refers to the custom of entering the name of a person's Charana in legal documents. Patañjali has the following query: 'Kim-sabrahmachārī tvam?', 'From which School are you?', implying that a student was known by the school from which he graduated and also in association with other fellows of the same school. This query, he says, may be put in three possible ways: (1) Who were fellows of the same school? (ke sabrahmachārinah); (2) Whose fellow-student are you? (keshām sabrahmachārī tava, II.2.24; I.425). These queries bring out the relative academic distinctions of students in life.
- (6) Women Students—Sūtra IV.1.63 (Jāte-rastrivishayād-ayopadhāt) as interpreted by Pataňjali shows that a woman could be a member of intellectual fellowships like Charaṇas which were socially assuming the status of jāti or caste (Charaṇa as jātī is admitted in gotrain cha charaṇaiḥ saha). The term Kaṭhī, for instance, denoted a female member of the Kaṭha school, an individual regarded as foremost

of her class being called Katha-vṛindārikā, and another deserving of special distinction as pūjyamāna-Kathī (II.1.62). The term Katha-māninī points to proud honour felt owing to academic lineage as a Kathī. Kathajātīya and Kathadesīya, understood in the light of Pāṇini V.3.67 (Īshadasamāptan etc.) were applied to those who were not full-fledged members of the Katha School, i.e. not endowed with the learning born of academic life therewith but belonging to the fellowship (jātī) or the region (deša) of the Kathas.

- (7) Social Honour—Membership of a Charana carried with it social honour and dignity, of which probably some were not slow to take advantage by assuming superior airs against other persons not possessing that distinction. Pāṇini hints at this sense of pride in the term ślāghā, e.g. Kāṭhikayā ślāghate, 'he glorifies himself in vanity as a Kaṭha.' At times such vanity would result in the disparaging of others, which Pāṇini refers to as atyākāra, e.g. Kāṭhikayā atyākurute, 'being puffed up as a Kaṭha he looks down upon others', (Gotracharanāch-chhlāghātyākāra-tadaveteshu, V.1.134).
- (8) Intellectual Ideal-The Charanas were the custodians of the cultural traditions created by generations of their students and teachers. These traditions were recorded in their literature built up through the ages. We have seen how Pāṇini is acquainted with the various types of literature as the output of the Charanas, viz. (1) the Vedic Śākhā texts, (2) Brāhmaṇa works, (3) Kalpa works, (4) the Dharma-sūtras (Charanebbyo dharmavat, IV.2.46). With the development of the Dharma-sūtra or legal literature there set in a process of gradual separation between the secular and scientific studies on the one hand and religious and ritualistic on the other. The Ashtādhyāyī itself is an example of this process at work, which introduced new subjects of study besides those traditionally comprised within the Charanas. For instance, the parishads of the Vedic Charanas themselves took the lead in promoting such studies, as phonetics, linguistics, grammar, and the like,

which later on became independent of Vedic studies and were cultivated in their own schools. The Pārshada work of each Vedic school concerned itself with linguistic and grammatical questions which gave scope to the rapid growth of these studies. It is to be remembered that whereas an individual Charana specialised in its own text or Sākhā of the Veda, and developed its related Brāhmaṇa and Sūtra, the different Charanas of the same Veda possessed in common their Pārishada work or Prātišākhya, conceived as belonging to all the offshoots or branches (šākhās) of the same Vedic tree (Śākhādibhyo yaḥ', V.3.103; Šākheva šākhyaḥ).¹

organized as autonomous bodies making their own rules and regulations as an expression of the democratic ideal in the sphere of learning and education and adopting the method and procedure of the Sanghas in their management. Pāṇini cites the specific instance of the sangha of students studying the Vedic text of the teacher Śākala, and thence called Śākala or Śākalaka (Śākalād-vā, IV.3.128; Śākalena proktam adhīyate Śākalāḥ; teshām sanghaḥ). It is obvious that the Śākalas, as also other Charanas, possessed an individual entity for social, economic or organised life in particular. This is illustrated by the fact that the name Śākala was also applied to the legend (anka) and the emblem or heraldic symbol (lakshana) adopted by the School on their reals and documents; the same word also denoted their separate settlement or campus (ghosha).<sup>2</sup>

11:

म् वृक्षादीनां शाखेवास्य वेदकल्पह्हो ऽ वयवाः शाखाः । शास्यं शास्यं प्रतीति प्रातिशास्यम् । दिधकृत्य कृतं प्रातिशास्यम् ।

<sup>&</sup>lt;sup>2</sup> Sūtra IV.3.128 (Śākalād-vā) as interpreted in the light of IV.3.127 (Sangbānka-lakshaņeshv-añ-yañ-iñām aŋ); cf. the examples in Kāšikā, Śākalaḥ ankaḥ, Śākalam lakshanam, Śākalaḥ ghoshaḥ; similarly Śākalakaḥ (Cf. K. P. Jayaswal, Hindu Polity, (1924), I.42).

## CH. V, SECTION 2. LEARNING

AGENCIES OF LEARNING—The various agencies in the spread of learning comprised (1) teachers, (2) authors, (3) regular students, (4) travelling scholars (charakas), (5) educational institutions, (6) learned assemblies and conferences, (7) discourses, (8) expositions and (9) literature. The cumulative work of these agencies resulted in a nation-wide expansion of education and learning.

IDEALS. The ideals of learning must have played an important part in the moulding of educational activities. Both the teacher and the taught (āchāryāntevāsinah) were inspired by the literary and cultural ideals of their age. We get from Pāṇini a graphic picture of the types of literature then developed, viz. Chhandas and Brāhmaņa works, Vedānga literature like Kalpa and Vyākaraņa, secular works and poetry, dramaturgical treatises and stories (IV.3.110-111), gāthās and ślokas (III.2.23). Students would prepare themselves for the study of one or other of these different classes of literature (tadadbite). In the sphere of teaching, there were different classes of teachers dealing with the several classes of literature, e.g. ācbārya for the esoteric knowledge of the Veda, śrotriya for recitation, pravaktā for prokta literature, ākbyātā imparting religious teaching, anūchāna for the Vedāngas, and adhyāpaka carrying on general teaching work. But from the point of view of scholarly attainments a large number of specialists in each branch of learning were coming into existence. In fact from Pāṇini's account of specialist scholars we learn that each text or subject of knowledge was represented by the learned men who had mastered it (tadveda, IV.2.59). For example, there is mention of experts in the various Soma sacrifices (kratus), named after the particular ritual which they

had mastered, as āgnishtomika, vājapeyika (IV.2.60); the reciters of uktha and the various forms of orthoëpic recitations of Chhandas texts, as the krama-patha and pada-patha (IV.2. 61); exponents of the Brāhmaṇa and Anubrāhamaṇa works (IV.2.62), and Sutra works (IV.2.65) dealing with the several classes of scientific literature. The Vedanga literature was represented by its specialists, such as vaiyākarana, (grammarians), (VI.3.7), nairuktika, (etymologists), and yājnika, (experts in Kalpa or ritual) (IV.3.129). Patañjali's elaborate list of works in the vārttikas appended to sūtra IV.2.60, shows the tendency towards specialization carried to extremes in his time, mention being made of experts in ornithology (vāyasavidyā), bodily signs (airga-vidyā), knowledge of cows (golaksbana), horses (asva-laksbana), military science (ksbattravidyā). Multiplication of works had advanced and each is spoken of in terms of its exponent. Even the story literature had its devotees, e.g. Yāvakrītika (adept in the story of Yavakrīta, (related in the Vanaparva, Chs. 133-38, A.B.O.R.I., XXI.282); Yāyātika (proficient in the legend of Yayāti, cf. examples on VI.2.103), Vāsavadattika (well-versed in the romance of Vāsavadattā), and Saumonottarika (a special student of the romance of Sumananottra, related at length in Buddhist literature (Dict. of Pali Proper Names, 1.361). Panini himself refers to special works dealing with akbyana material (VI.2.103).

CHARAKA—The peripatetic scholar was called charaka, as distinct from the mānava and antevāsīn who were attached to their schools (V.1.11, Māṇava-charakābhyām khañ). Vai-sampāyana was called a charaka, obviously on the basis of his literary activities from place to place; his pupils following in his footsteps were also known as charakas. The charakas were like post-graduate scholars who after finishing their studies sought higher knowledge by travelling. The expression chārikam charantā is applied in the Jātakas to advanced students of the Takshasilā university, who after reaching the end

of their studies travelled to train themselves in the direct know-ledge of country observances (Sonaka Jātaka, V. 247). In the Brihad. Up. we find Bhujyu Lāhyāyani mentioning to Yājñavalkya his wanderings in the Madra country as a charaka (Madreshu charakāḥ paryavrajāma, III.3.1). Yuan Chwang mentions about Pāṇini himself that he travelled widely in search of linguistic material, interrogating learned men in different localities.

AUTHORSHIP—Specialists justified themselves by creative activity in producing advanced literature. Pāṇini makes mention of granthas or works composed (IV.3.87; IV.3.116).

He refers to the following classes of authors: (1) mantrakāra, (2) padakāra, (3) sūtrakāra, (4) gāthākāra and (5) ślokakāra (III.2.23). These terms point to the different types of literature and styles of composition which they represented.

A writer on grammar is named sabdakāra (III.2.23), or šābdika (IV.4.34, šabdam karoti šābdiko vaiyākaranab). The literature of commentaries (vyākhyāna, IV.3.66) was also growing and was the work of learned men who were inspired to produce them by their mastery of the original works. The highest intellectual output of the age was, however, the work of master-minds and original thinkers like Apisali, Yaska, Śākatāyana and Pāṇini, who discovered and opened up new fields of knowledge. The literary efforts of these geniuses were aptly called upajñā, new knowledge promulgated, or ādya āchikhyāsā, knowledge presented for the first time (sūtras II. 4.21, Ubajñopakramani tadād yāchikhyāsāyām; IV.3.115; VI.2. 14). An indication of the great pains which these pioneers of learning took in order to enrich their subjects is given by Patañiali when he speaks of Pānini as mahatā yatnena sūtram branayati sma, i.e. 'he planned and composed the sūtras with strenuous effort'. Pāṇini himself speaks of a perfect sūtra as bratishnata, 'immersed', i.e. emerging out of concentrated thought (VIII.3.90, sūtram pratishnātam). The simile appears to be taken from the maturity attained by one who had

become a snātaka. He also refers to the linguistic forms expressive of the devotion of an author to his work (bhāsana, jñāna, yatna) expressed by the root vad in the Ātmanepada, as vadate chārvī Lokayate, 'the Chārvī teacher shows himself brilliant in the exposition of the Lokāyata doctrine.' I.3.47).

Păṇini mentions a type of literary activity called prakathana (I.3.32), or extempore composition, e.g. găthāḥ prakurute (Kāšikā). It appears that the gāthākāra mentioned in sūtra III.2.23 was a person who was expected to compose at the spur of the moment gāthā verses, generally of a eulogistic character. In the Pāriplava ākhyāna of the Śatapatha Brāhmaṇa the vīṇāgāthī, also called vīṇāgaṇagin is said to sing gāthā verses of his own composition (svayam sambhritā gāthā gāyati, Ś.B. XIII.4.3.5). The word gāthaka derived by Pāṇini from the root gai, to sing (III.1.146) seems to have been originally connected with a gāthā composer who sang the verses to the accompaniment of a lute.

NAMING OF BOOKS—Pāṇini enunciates two general principles for the naming of literary works: (1) after the name of the author (Krite granthe, IV.3.116), e.g. Vāraruchāḥ ślo-kāḥ, the ślokas composed by Vararuchi; and (2) after the name of the subject treated (Adhikritya krite granthe, IV.3.87), e.g. Saubhadra, 'story of Subhadrā'; Gaurimitra, not explained; Yāyāta, story of Yayāti. These short stories were meant to popularise the great characters of ancient history. As examples of works named after subects, Pāṇini mentions (1) Śiśukrandīya ('a work based on the cry of the divine child Kṛishṇa at birth'); (2) Yamasabhīya ('relating to the assembly of Yama'); (3) Indrajananīya ('relating to the birth of Indra') (IV.3.88).

Commentaries were named after the topics they expounded (vyākhyātavyā-nāmnaḥ, IV.3.66), e.g. Supām vyākhyānaḥ Saupaḥ granthaḥ (a book on Nouns); similarly Taina (verbs); Kārta (verbal Nouns); Shātvaṇatvikam (Cerebralisation); Nātanātikam (Accentuation). Pāṇini cites examples of com-

mentarial literature dealing with topics, both big and small; e.g. (1) kratus (IV.3.68) such as (a) Agnishtomika (dealing with Agnishtoma sacrifice), (b) Vājapeyika (dealing with Vājapeya sacrifice), (c) Rājasūyika (dealing with Rājasūya sacrifice); (2) Yajnas (smaller sacrifices in the domestic fire, IV.3.68), such as (a) Pākayajnika, (b) Nāvayajnika; (3) Adhyayas (Chapters of Vedic works, IV.3.69), such as (a) Vāsishthika Adhyāya (Vasishthasya vyākhyānah, commentary of the Seventh Mandala of the Rigveda), (b) Vaisvamitrika (Third Mandala); and (4) smaller works, like (i) Paurodāšika (relating to the explanation of the mantras used in the preparation of purodāša oblation); (ii) Purodāšika (relating to the regulations for the preparation of purodasa); (iii) Chhandasya or Chhāndasa (a book on meters, IV.3.71); (iv) Aisţika (IV.3.72, on the household sacrifices); (v) Pāśuka (animal sacrifices); (vi) Chātur-hotrika (relating to the Chatur-hotri service, performed by the four chief-priests); (vii) Pānchabotrika (on the particular formula called pancha-botri, in which five deities are named); (viii) Brāhmaņika (commentary of a Brāhmana); (ix) Ārchika (of the Rik verses); (x) Prāthamika (probably the Prathmärchika of the Sāmveda); (xi) Adhvarika (relating to the Adhvara or Soma-sacrifice); (xii) Paurascharanika (relating to a preparatory rite as mentioned in the Satapatha Br.); (xiii) Nāmika (dealing with Nouns) and (xiv) Akbyātika (dealing with Verbs; IV.3.72). (xv) Ārgayana (=Rigayana-vyākhyāna, explanatory of the recitation or study of the whole Rigveda, IV.3.73, cf. also Kāšikā on VI.2.151). This extensive literature of commentaries is mentioned in the sūtras, IV.3.68-72. Other explanatory works based on minor texts are cited in the Rig-ayanādi gaņa (IV.3. 73), such as Chhandomana, Chhandobhasha, Chhandovichiti, Nyāya, Punarukta, Vyākarana, Nigama, Vāstuvidyā, Angavidyā, Kshattravidyā, Utpāta, Samvatsara, Muhūrta, Nimitta, etc. (Cf. airgavijjā, vatthuvijjā, khattavijjā in the Brahmajālasutta, Dīghamikāya, 1.21).

Sūtra works had the peculiarity of being named after the number of their chapters (adhyāyas, V.1.58), e.g. Pānini's own work called Ashtaka ('Eight Chapters'). The Kāśika adds that the work of Kāšakritsni consisting of three adbyāyas was called Trika ('Three Chapters'), and of Vyaghrapad Dasaka ('Ten Chapters') (V.1.58). The students studying these texts were also designated as Ashtakah, Trikah Dasakah respectively (IV.2.65, Sūtrāch-cha kopadhāt). A similar principle of naming operated in the case of two Brahmana work of 30 and 40 chapters (V.1.62), which, as Keith suggests, were the Kaushitaki and the Aitareya Brāhmanas respectively (Rigveda Brāhmanas, Intro.). We know at least in the case of the Satapatha that the adhyāya division was an important factor in the growth of its contents. The first nine books dealing with a complete exposition of the Haviryajña and Soma sacrifices (Books I-V also called Ishti-Pasubandha, cf. Kāsika on sūtra II.1.6) contained sixty adhyāyas and were known as Shashtipatha ('Sixty Chapters'). With the addition of the last five books (X-XIV) consisting of forty Chapters the name Satupatha was finally applied to the work.

PLAN OF A TREATISE—A requisite of literary composition is its proper planning and presentation of subject-matter. This plan is called tantra-yukti. The work of Kautilya has thirty-two Tantra-yuktis; Charaka and Susruta also mention them, the former adding three more to the list. The ancient Tamil grammar, the Tolkappiyam, based on the tradition of the Aindra school, enumerates in its Porulatikaram section thirty-two principles of which twenty-two agree with those of Kautilya. The Mimārisakas with their flare for analysis have indicated the principles of a literary composition. Of these they have singled out samgati, inherent consistency or internal order, and mangala, benedictory opening. These Tantra-yuktis were also known to Pāṇini. The first of these, viz. Adbikāra, treatment of the matter within the purview or scope of a work is referred to in the sūtra Adbikṣitya kṛite granthe

(IV.3.87), i.e. a work that is composed in accordance with the principle of adhikāra, or sense of the relevant. Pāṇini's own work is model of Vidhāna or the treatment of topics in their inherent order. Whitney supposed that the Ashṭādhyāyī lacked the logical order in the arrangement of its topics, but Barend Faddegon has shown that this assumption is not correct (Studies on Pāṇini's Grammar, 1936). Buiskool from his Study of the Tripādī Chapters (Tripādī, 1939) holds that Pāṇini's work was based on a system of thematical groups which are rationally classified and arranged.

Other principles of treatment proper for scientific works are also indicated by Pāṇini, e.g. (1) Hetvartha, the ground of a statement or proposition (as in I.2.53); (2) Upadeśa, the author's own directions or instruction contained in his work (as in I.3.2); (3) Apadesa, citation of another's opinion along with one's own, for refutation (as in I.2.51-52); (4) crossreference of which there are so many in the Ashtādhyāyī; (5) Sainsaya or Vipratishedha, doubt arising from two equally forceful alternatives (I.4.2); (6) Vakyādhyāhāra, supplying an ellipsis, mentioned in sūtra VI.1.139; (7) Anumata, citation of the opinion of another for its acceptance, as in the case of the opinions of other grammarians quoted by Pāṇini; (8) Atisaya-varnana, detailed description or over-loading with details (as in Indriyam Indra-lingam Indra-drishtam Indrasrishtam Indra-jushtam Indra-dattam iti va, V.2.93); (9) Nirvachana employing the derivative sense of a word, as in the case of mahāsamijnās, like Sarvanāma, Avyaya; (10) Svasamijnā, use of one's own technical terms as ti, ghu, bha; (11) Pürvapaksha and (12) Uttarapaksha, arguments for and against a proposition by which its truth may be ascertained (as in the Sūtra-kāṇḍa, I.2.51-56); (13) Atidesa, analogous application, (as in I.2.57, Kālopasarjane cha tulyam); and (14) alternative application, which appears in such words as vā, anyatarasyām, ubhayathā,

<sup>&</sup>lt;sup>1</sup> For a simple analysis of the plan of the work adopted by Panini, see Belvalkar, Systems of Sanskrit Grammar, pp. 20-22.

ekeshām, bahulam and vibhāshā in the Ashtādhyāyī (cf. Patanjali for the rationale of these variant terms, II.1.58; I.400). THEORY OF MANGALA-Mangala means invocation or benediction with which a treatise is to be commenced. The invocation of the Divine was made to ensure the success of the undertaking. Pānini, as one of the greatest authors has also commenced his work, the Ashtādhyāyī, with a similar invocation, indicated in his use of the word vriddhi at its beginning, though it meant an alteration in the order of the words which should have read Adaich vriddhib, and not Vriddhir-adaich (I.1.1). Patanjali raises this point and obviates the objection by invoking the practice of mangala. He says that Pānini as a mangalika āchārya, chose to begin his treatise with vriddhi, a word that ensures the growth of the work and the longevity of its readers (Bhāshya, I.40). Patanjali takes recourse to the same practice of mangala to justify the use of vakāra in sūtra Bhūvādayo dhātavah (I.3.1). He further extends it to the middle and end of a work (mangaladini mangalamadhyani mangalantani bi śastrani prathante, I.3.1; I.252). This seems to hold good in the case of the Ashtādhyāyī, for it has been suggested that the sūtra Siva-sam-arishtasya kare (IV.4.143) represents Pānini's use of mangala also in the middle of his treatise. Only a few aphorisms later, sūtra Tasmai bitam (V. 1.5), a benedictory expression ('Good be to all concerned!'), seems to be deliberately used by Pānini to name two of his most important chapters (fourth and fifth), viz. Taddhita, dealing with hundreds of grammatical formations (vrittis).

Păṇini also uses the benedictory term udaya in the last but one sũtra of the Ashṭādhyāyī. The use of udaya in place of shorter para points to his faith in the practice of mangala (udāttaparasyeti vaktavya udaya- grahaṇam mangalārtham, Kāśikā, VIII.4.67). The word udaya of this sūtra was taken by him from the Rik Prātiśākhya, which uses it as a synonym of para (cf. rikāra udaye, II.32). It is impossible to agree with Sköld who argues that the sūtra a a concluding Pāṇini's

great work, coming as it does after the mangala-denoting word udaya, is a later interpolation (Papers on Pāṇini, p. 8). This assumption is not quite tenable considering that Kātyā-yana devotes four vārttikas to it, and Patañjali also comments on them as authentic. Both of them conclude their works with the observation Bhagavataḥ Pāṇineḥ siddham. Patañjali, in his comment on siddha, the first word of the opening vārttika of Kātyāyana, makes that teacher also subscribe to the theory of mangala (as a māngalika āchārya, Bhāshya, I.7).

In the Pārshada or Prātišākhya tradition of the Charaņas Om was pronounced at the commencement of svādhyāya. Pāṇini says that for this purpose it was to be uttered with a pluta accent (Om-abhyādāne, VIII.2.87).

WRITING—Writing was known in the time of Pāṇini and even earlier according to Goldstücker who thinks that Vedic literature was available to Pāṇini even in Mss. (Goldstücker, Pāṇini, pp. 11-47). Though teaching was oral in those days, and study from manuscripts was not encouraged on principle as the proper method of learning, Pāṇini hints at the use of writing in several significant expressions. These are (1) grantha, (2) lipikara, a writer, (3) Yavanānī lipi, and (4) the marks of numerals imprinted on the ears of cattle to indicate their owners, as already shown (VI.3.115).

(1) Lipikara (HI.2.21) as well as its variant form libikara, denoted a writer. The term lipi with its variant was a standing term for writing in the Maurya period and earlier. Dhammalipi, with its alternative form dharmadipi, stands for the Edicts of Asoka engraved on rocks in the third century B.C. An engraver is there referred to as lipikara (M. R. E., II) Kautilya also knows the term: 'A king shall learn the lipi (alphabet) and sankhyāna (numbers, Arth. I.5). He also refers to samijāā-lipi, 'Code Writing' (Arth., I.12) used at the Espionage Institute. In the Behistun inscription we find dipi for engraved writing. Thus it is certain that lipi in the time of Pāṇini meant writing and script.

- (2) Branding of kine with numerals. Pāṇini refers to the marking of certain signs on the ears of cattle to indicate ownership. Among several signs thus branded (sūtra VI.3.115), the terms ashṭa and pañcha stood for the written figures of the numerals \$ and 5 (Goldstücker, Pāṇini, p. 44).
- (3) Yavanānī (IV.1.49). Kātyāyana's vārttika mentioning the lipi of the Yavanas (Yavanāl-lipyām) is only an explanation of Pāṇini's use of the term Yavanānī. It is unwarranted to assume that he is supplying some new information not known to Pāṇini. Such an assumption goes against the very style of Kātyāyana's other vārttikas on this sūtra, designed to explain and not supplement the words of Pāṇini's rule, as himānī, araṇyānī, yavānī. Yavanāni as the name of a script occurs in the list of scripts in the Samavāyānga sūtra (Samavāya XVIII) under the form Javanāniyā (cf. also the same list in Paṇṇavaṇā sūtra). Weber interpreted Yavanānī as Greek writing (Ind. St., IV.89). Keith also holds that Yavanānī lipi meant 'Greek (Ionian) writing' (Hist. of Sans. Lit., p. 425).

Goldstücker and Spooner took Yavanānī to refer to the Persian cuneiform writing which Keith refutes as highly improbable since there is no evidence to show that the word Yavana ever meant the Persians (J.R.A.S., 1915, p. 432). Darius (B. C. 521-B. C. 485) in his Old-Persian Inscriptions refers to the country Yauna and to its inhabitants as Yauna (Behistun Inscription, names of the twenty-three provinces), which shows that the terms cannot be taken to mean Persia or the Persians. Most scholars agree in taking them as Ionia and Ionian Greeks. Asoka likewise uses in his inscriptions the word Yona for Yavana and not for the Persians. The suggestion that Yavanānī was the name of the Armaic writing discovered in a stone inscription at Takshasila, likewise remains unsupported by any proof, Herodotus mentions a contingent of Indian soldiers in the army of Xerxes fighting in Greece and there were Greek colonists settled in Bactria even before Alexander. Thus Pāṇini's knowledge of the word for Greek writing can be naturally understood.

## CH. V SECTION 3. LITERATURE

CLASSES OF LITERATURE—Pāṇini classifies literature on the basis of the character of the creative effort producing it. This is indicated by the following terms:

(1) Drishta (IV.2.7). Literature that is revealed or seen. Under this class he mentions the Sāmans named after their seers or Rishis, e.g. Kāleya (IV.2.8) and Vāmadevya (IV.2.9).

He also must have known the Sambitās of the Rigveda and Yajurveda, and their divisions like Sākta (V.2.59), Adbyāya and Anuvāka (V.2.60).

(2) Prokta (IV.3.101). Literature promulgated enounced by Rishis, as founders of the different Vedic Charanas, Under this class were included the Chhandas works (IV.2.66), or Śākhās, e.g. the Śākhā works of the Taittirīyas (IV.3.102), Kathas (IV.3.107) and Kālāpās (IV.3.108); and the older Brāhmanas (IV.3.105). As pointed out above the Prokta works were connected with the teachers and students devoted to their study in the Charanas. This complete identity of the name of a Vedic text with that of its students held good for Śākhā and Brāhmana works only (IV.2.66). For example, in the School of the Taittiriyas, the original Śākhā and its Brāhmana alone would be entitled to a name in accordance with the rule of tad-vishayatā, as Taittirīya Sākbā and Taittirīya Brāhmana. But in course of time the Aranyaka and Upanishad portions were also developed as constituent parts of the Brāhmanas, and the name Taittiriya was applied to them also.

A third kind of Prokta works developed in the Vedic schools was that of the Kalpas, or Śrautasūtras, classed as Vedānga works. Kātyāyana and Patanjali definitely state that the rule of tad-vishayatā did not apply to Kalpa works, but an exception was made in the case of only two such Kalpa books, viz.

those of Kāśyapa and Kauśika, who are mentioned by Pāṇini as Rishis (IV.3.103). The schools of Kāśyapa and Kauśika were known as Kaśyapinah and Kauśikinah (Kāśyapa-Kauśika-grahanam cha Kalpe niyamārtham, Vār. 6 on IV.2.66).

Another variety of Prokta literature mentioned by Pānini consisted of two special kinds of sutra works, viz. (1) the Bhikshusūtras of Pārāśarya and Karmanda, and (2) the Natasūtras of Šilālin and Krišāśva (IV.3.110-11). It is surprising that the strict principle of tad-vishayatā which applied to Vedic works should have been extended to these four works of later origin and secular character. The examples cited by Patanjali, Pārāšarino bbikshavab, Šailālino natāb, show that these treatises were connected with their own schools with a succession of teachers and pupils (adbyetri veditri), like other orthodox sacred works. The Pārāšara and Śailālaka Charanas were originally related to the Rigveda, but their activity later on centred round new subjects of study dealt with in their Bhikshusūtras and Natasūtras. Probably the Natasūtras of Silālin were the original sources of the material in Bharata's Nātyaśāstra. The Vedic schools lent their authority to the secular subjects promoted by them, which were thus given the rank of Chhandas works (Bhikshu-Nața-sūtrayoś-Chhandastvam, Kāšikā), and the status of Vedic schools applied to them (Atrāpi tad-vishayatā chetyanuvartishyate, Bhāshya, II.286). That Pānini looked upon the dramaturgical works as amnaya of sacred authority associated with the Charanas, is borne out by the reference to Nātya in sūtra IV.3.129, (cf. nata sabdādapi dharmāmnāyayoreva bhavati, Kāšikā). The Bhikshusūtra of Karmanda and the Natasūtra of Krišāšva were no doubt the product of the Vedic Charanas (atrāpi tad-vishayatārthain chhando-grahanam, Kāšikā, IV.3.111). It is not known to which Veda these latter belonged.

(3) Upajñāta (IV.3.115). Literature bringing to light new knowledge expounded for the first time (ādya āchikbyāsā, II.4.21), came under this class, e.g. the works of

such original authors as Apiśali, Panini, Vyadi and Kaśakritsna (IV.3.115). Upajñāta formed a special class under Prokta literature, since the grammatical treatises of Apisali, Panini, etc, are both regarded as Prokta and Upajñāta (Pāṇininā proktam, Pānininā upajnātam, both were Pāninīyam). This is just what should have been expected in the transitional period. Such texts combined certain features of the Chhandas Prokta works and other features of independent texts cultivated outside the Charanas. The most distinctive feature was the principle of individual authorship, which did not operate in the case of the Prokta class of Vedic texts, but was applied to Upajnāta works being the exclusive fruit of the creative efforts of their authors. Special scientific treatises, mostly the Vedanga literature, were being written outside the Charanas, as a result of the intense intellectual activity on the part of their authors. The works of Yāska and Śākatāyana, Audavraji and Pāṇini were of this category and named after the first exponents (e.g. Pānininopajnātam Pāninīyam akālakam vyākaranam, Kāsikā, IV.3.115).

The school-denoting (adbyetri-veditri) suffix was elided in this case also (Proktāl-luk, IV.2.64). Thus both the treatise of Pāṇini and its teachers and students were called Pāṇinīya. Although in its effect on the formation of names of the text and its school there was no difference, but from the institutional point of view the difference was remarkable between the method of study as applied to the new works like those of Pāṇini on the one hand and the traditional Charaṇa literature on the other. The followers of new sciences were not organized into the same sort of educational fraternity as in the case of the Śākhā works. Moreover, the Pāṇinīya treatise and the Pāṇinīya students did not belong to one particular Charaṇa, but were connected with Vedic schools in general.

Sūtra IV.2.65 states that the students of the new sūtra works were also named after the number of chapters in the texts studied by them, such as Ashṭakāḥ, Daśakāḥ, Tṛikāh. Thus all the Pāṇinī yas to whichever Vedic school they belonged would

be called Ashtakāh.

As a sequel to intensive efforts at compilation and computation this special phase of naming texts had been evolved much earlier, as names like Satapatha, and Shashtipatha testify. Pāṇini himself refers to two Brāhmaṇa works with 30 and 40 adhyāyas, and on that account known as Traimsa (=Kaushītākī) and Chātvārimśa (=Aitareya) (V.1.62).

(4) Kṛita (IV.3.87; IV.3.116). This class of literature comprised ordinary works, termed grantha, which were named after their subject-matter (Adhikṛitya kṛite granthe, IV.3.87) or by an adjective derived from the author's name (Kṛite granthe, IV.3.116). The rise of the śloka metre and with it the emergence of the classical poet (ślokakāra, III.2.23) rapidly brought into being a new type of kāvya and nāṭaka literature as a medium of literary effort, and these were put under the Kṛita class. For example, Sanhhadra (a book based on the story of Subhadrā); Yāyāta (on the legend of Yayātî); and Vāraruchāḥ ślokāḥ (a book of verses composed by Vararuchi), all later examples recorded in the Kāšikā. Pāṇini himself cites Śišukrandīya, Indrajananīya (works relating to the birth of Kṛishṇa and Indra) as instances of Kṛita works.

Kṛita is to be distinguished from Upajñāta in that the former referred to a book composed by a certain author; whereas the latter always had reference to a topic promulgated by a person. As Maxmuller puts it: 'A work which has only been taught and promulgated by a person, is not to be called his book (grantha), but bears its own title, such as "grammar", or, whatever else it may be, together with an adjective derived from the author's name. Pāṇini's grammar, for instance, is not to be called Pāṇiniyo granthaḥ, but Pāṇiniyam Vyākaraṇam, because it is a canonical work revealed to Pāṇini, but not invented by him." (Hist. of Skt. Literature, p. 361).

(5) Vyākhyāna (IV.3.66). Literature of Exposition and Commentaries. It comprised miscellaneous works on religious and secular subjects. These were not to be reckoned as original

works, but were called for by the practical needs of interpreting and conserving Vedic texts, performance of rituals, and also to advance the knowledge embodied in the Vedāngas, works of philosophy and miscellaneous subjects, such as astrology (Jyotish), divination (Angavidya), military science (Kshatravidyā), etc. These included a vast and varied range of literature, like the extensive works on Soma-Kratus and smaller handbooks on Purodāša, explanations of special parts (Adbyāyas) of the Rigveda, specialised grammatical works like Nāmika and Akhyātika (IV.3.72). The literature of Commentaries added to the volume and variety of Sanskrit literature by the contributions made to it by authors of different capacities, competent to deal with such scientific subjects as grammar and etymology, and others to treat such minor topics as portents (utpāta, IV.3. 73), and fortune-telling (nimitta), its text being called naimitta, (IV.3.73) and an interpreter of prognostics as naimittika, (IV.2.60). Pāṇini refers to foretelling in sūtra I.4.39 (Rādbīkshyor-yasya vipraśnah).

## Works Known to Panini

Vedic texts is known by (1) works mentioned by name, and (2) texts that provided him material for his Grammar. Thieme, tracing Pāṇini's references to their original sources, has shown that Pāṇini derived his grammatical material from the texts of the Rigweda, Maitrāyaṇī Saṃbitā, Kāṭbaka Saṃbitā, Taittirīya Saṃbitā and Atharvaveda, probably also from the Sāmaveda. To these may also be added the Sākalya Pada-pāṭha of the Rigweda which has supplied him with material for sūtras I.1.16-18 (P. Thieme, Pāṇini And The Veda, p. 63). Thieme further points out that some of the Vedic forms used by Pāṇini cannot be traced to any extant Vedic works. Possibly they were derived from some text or Śākhā of the Black Yajurveda which was known in his time but now lost to us (ib., p. 64). The Atharvaveda used by Pāṇini is believed to be in its

Paippalada recension (ib., p. 66).

Goldstücker held that Păṇini did not know the Atharvaveda (Pāṇini, p. 108). According to Weber this view is not
tenable, since Pāṇini has actually utilised the material from this
Veda (Thieme, ib., p. 73). Pāṇini mentions Ātharvaṇikas
(students of Atharvaṇ, VI.4.174), and includes the name
Atharvan and Ātharvaṇa in the Vasantādi-gaṇa (Bhāshya,
II.320), on which Patañjali says that the Ātharvaṇika students
were studying an Āmnāya (i.e. Śākhā) and a Dharma (i.e.
Dharmasūtra) of their own.

Goldstücker had taken the view that the Vājasaneyī Sambitā and the Śatapatha Brāhmaņa were also unknown to Pāṇini. Thieme thinks that Pāṇini did not gather any material from the White Yajurveda, but this should not mean that Pāṇini's grammar was anterior to the Vājasaneyī Sambitā and the Śatapatha Brāhmaṇa (Thieme, ib., p. 74; K. B. Pathak, A.B.O.R.I., IX.84). Pāṇini refers to Vājasaneya and Vājasaneyin in the Gaṇa-pāṭha Śaunakādi (IV.3.106).

TERMS INDICATIVE OF TEXTS-Pānini has used in his sūtras the following terms associated with certain texts: (1) Chbandas, (2) Mantra, (3) Rich, (4) Yajus, (5) Brāhmana, and (6) Nigama. Chhandas denoted the sacred literature, as distinguished from Bhāshā, the spoken language. Chhandas included both the Samhita and the Brahmana literature. The term Mantra had a more restricted scope, being applied to a sacred formula whether in verse (rich) or in prose (yajush), as opposed to the Brāhmana. Thus the particular linguistic forms noted for Mantras do not occur in the Brahmanas. The term Rich stands in Pānini for a Vedic stanza, as opposed to a formula in prose which was called Yajush. Brāhmana stands for the Brahmana works, and a-mantra of sutra III.1.35 also pointed to non-mantra literature or the Brahmanas. The word Nigama denoted linguistic and exegetical tradition as embodied in the Vedic literature.

VEDIC ŚĀKHĀS-The Śākbās or different recensions, as we

have seen, formed the basis upon which the Charanas or Vedic Schools were based. They were known also as Chhandas texts and as Āmnāya (Bhāshya, II.319, Charanād dharmāmnāyayoh). The Brāhmana works in addition to the Chhandas works formed the principal subjects of study in a Vedic Charana or School as stated in the sūtra, Chhando-Brāhmanāni cha tad-vishayāni, (IV.2.66).

RIGVEDA—The following Schools of the Rigveda were known to Pāṇini:

(1) Śākala. Pāṇini knew the Pada-pāṭha of the Rigveda arranged by Śākalya (I.1.16). He also refers to students studying the Prokta work of Śākalya (Śākalād-vā, IV.3.128). The Śākalas formed an important School of the Rigveda. The present recension of the Rik Sambitā is that of the Śākalas, and belongs specially to that branch of this School which bears the name of the Saisiriyas. The Rik Prātisākhya proclaims its affiliation to the Śaiśiriya Śākhā in its introductory verses. Pāṇini refers to the Śaiśirīyas in the Gana-pātha to IV.2.138. According to Weber, tradition makes the Śākalas intimately connected with the Sunakas, and to Saunaka in particular a number of accessory works of the Rigveda are attributed (Hist. of Ind. Lit. p. 33). Pānini mentions the antevāsins of both these schools, Śākālas and Śunakas, under the compound word Śāhala-Śunakāh (Kārta-Kanjapādi gana, VI.2.37), indicating their intimate relationship as offshoots of the same school.

The Śākalas again in their development branched off into five divisions founded by the disciples of Śākalya, named as (1) Mudgala, (2) Gālava, (3) Vātsya, (4) Sālīya, and (5) Śaiśirīya.

Pāṇini refers to a Krama-pāṭha in sūtra IV.2.61, which appears to imply the Krama-pāṭha of the Rik-Sainhitā traced to its author named Pañchāla Bābhravya. A Bābhravya is mentioned in sūtra IV.1.106 as belonging to the Kauśika gotra. In the Gaṇa-pāṭha of Kārta-Kaujapādi (VI.2.37) Bābhravya's students are referred to along with those of Śaunaka as Śunaka-

Bābhravāh, evidently emplying that they were both followers of the same Śākhā of the Rigveda. In the later text of the Matsya Purāṇa (21.30) is recorded the tradition that Bābhravya was the author of the Krama-pāṭha, and also that he was the minister of King Brahmadatta of Dakshiṇa-Pañchāla.

- (2) Bāshkala. Another important recension of the Rig-veda was represented by the Bāshkalas according to the Charana-Vyūha (Weber, H.I.L., p. 32). This recension is not directly mentioned by Pāṇini, but one of the disciples of Bāshkala was Parāśara who founded the Pārāśarī Śākhā. Patañjali refers to a Kalpa work of this school, the students being known as Pārāśara-kalpika (Bhāshya on IV.2.60). Pāṇini had this Vedic School in mind when he mentioned the Bhiksu-sūtras of Pārāśarya developed as a special branch of study under the auspices of the Pārāśara Charana, the followers of which, having embraced the ascetic life, were known as Pārāśarin Bhikhsus (Pārāśariṇaḥ bhikshavaḥ, IV.3.110). It may be noted that the Pārāśarya School showed its originality in producing the Bhikshu-sūtras as a class of Prokta literature, and not any Chhāndasa works for which they depended on the Bāshkala School.
- (3) Śilālin. Pāṇini mentions Śilālin as the author of Naţa-sūtras, his students forming the Vedic School of Dancing designated as Śailālinaḥ naṭāḥ (IV.3.110). The Śailālakas were originally a Rigvedic Charaṇa with their own Brāhmaṇa, cited as the Śailālika Brāhmaṇa in the Āpastamba Śrauta-Śūtra (Keith, Āpastamba and the Bahvricha Brāhmaṇa, J.R.A.S., 1915, p. 498). Kātyāyana also knows of the students of this Vedic school as Śailālāḥ (VI.4.144). Thus it will be seen that the students of dramaturgy were called Śailālinaḥ while those of orthodox Vedic studies were known by the simpler name of Śailālāḥ. The growth of a secular text like the Naṭa-sūtra under the auspices of a Vedic School shows the scope that Vedic literature gave to new intellectual development not directly connected with religion.
  - (4) Bahvricha. Pāṇini mentions the Amnāya and Dhārma

of the Bahyricha School as Bāhyrichya (IV.3.129), and refers to Bahyricha as the name of a Charana (Antargana-sūtra, anricho manave Bahvrichas-charanakhyayam, V.4.154). That this school once enjoyed wide distribution, is shown by Patañjali speaking in terms of the Bahvrichas while referring to the Rigveda recensions (chavimsatidbā Bābvrichyam, I.9). The Bahyrichas are referred to in the Satapatha Brāhmana (XI.5.1. 10) and quoted a dozen times in the Aspastamba Śrauta Sūtra. None of these citations can be traced to the two Rigveda Brahmanas known to us, viz. Aitareya and Kaushitaki, and Keith was led to observe that 'It is perfectly certain that he (Apastamba) meant some definite work which he may have had before him and in all probability all his quotations come from it' (Keith, Rgveda Brāhmanas, p. 496). It is unfortunate that neither the Samhita, nor the Brahmana of this school has survived. According to Kumārila the Bahvrichas were governed by the Gribya-sūtra of Vasishtha (Tantravārttika, I.3.11). Keith thought that the Bahvricha School was identical with Paingya, but they are mentioned as two separate Schools in the Kaushitakī Brābmana.

(5) Śaunaka. The Śaunaka School had its Chhandas text (Śaunakādibhyaś-Chhandasi, IV.3.106), the students being called Śaunakinah. As already pointed out the Śaunaka School was intimately connected with the Śākalas. To Śaunaka in particular a number of writings on the Rigveda are attributed (Weber, H.I.L., p. 33).

Pāṇini also refers to Paila (II.4.59), although his association with a Vedic text is not mentioned. Paila is known as a redactor of the Rigveda, and as following the tradition of Vyāsa. The School of Paila had two offshoots, viz. the School of Bāshkali and that of Māṇdukeya, the latter being mentioned in the Kārta-Kaujapādi gaṇa together with Sāvarṇi.

YAJURVEDA—The Krishna Yajurveda is referred to by Pāṇini several times. Amongst teachers of this School he mentions Tittiri, Varatantu, Khaṇḍika, Ukha, (IV.3.102), Katha

and Kalāpin (IV.3.107-108). The original teacher and founder of this School was Vaisampāyana whose direct disciples are called Vaisampāyanāntevāsin (IV.3.104). These had the privilege of personal contact with the teacher (pratyaksha-kāriṇaḥ, according to the Kāsikā). Each of these became the founder of a school and promulgated its own text. Weber has pointed out: 'Of the many schools which are allotted to the Black Yajus, all probably did not extend to the Samhitā and Brāhmaṇa; some probably embraced the Sūtras only. This is likewise the case with the other Vedas.' (H.I.L., p. 88). The following Schools may be noticed:—

(1) Taittirīya (IV.3.102). Pāṇini mentions Tittiri as the founder of the Taittirīya School. The Taittirīyas had close connection with the Kathas since the last sections of the Taittirīya Brāhmaņa are named Kāṭhaka (Bhagavaddatta,

Vaidika Vānmaya kā Itihāsa, p. 197).

(2) Aukhīyas (IV.3.102). The Taittirīyas grew into two Schools, the Aukhīyas and the Khāṇḍikīyas (cf. Charaṇa-vyūha, II.1). The Ātreyas referred to in II.4.65 as a counter-example and in IV.1.117 as a goira name were a branch of the Aukhīyas.

(3) Khāndikīya (IV.3.102). It was a branch of the Taittirīyas from which grew later the Schools of Apastamba,

Hiranyakesin and Bharadvaja (Charanavyūha).

(4) Vāratantavīya (IV.3.102). This School existed independently in the time of Pāṇini, although not a single text of the same has survived.

(5) Vaišam pāyana and Charaka. Pāṇini mentions the followers of the Charaka School as Charakas (IV.3.107). The Kāšikā informs that Charaka was the name of Vaišampāyana (Charaka iti Vaišam pāyanasyākhyā, IV.3.104). Charaka was originally used in the sense of a "Travelling Scholar", from the root chara, "to wander about for instruction" (Weber, H.I.L., p. 87). In the Śatapatha Brāhmana the adherents of the Charaka branch of the Black Yajus are designated Charakādh-

varyus. Vaisampāyana stands out as the pre-eminent Vedic teacher, whom Sabarasvamī following an old tradition describes as the originator of all the Sākhās of the Krishna Yajurveda (Smaryate cha, Vaisampāyanah sarva-sākhādhyāyī, Mimānisā Bhāshya, I.1.30). The Kāsikā mentions the names of nine pupils of Vaisampāyana who were grouped territorially. Patañjali, referring to the three Prāchya (Eastern), three Udīchya (Northern) and three Madhyama (Meridional) Charanas, alludes to the Schools of Vaisampāyana as established by his disciples (Bhāshya, II.301; IV.2.138, madhya-madhyamani chān-charane).

- (6) & (7). Schools of Ālambi and Palanga. These were the two eastern disciples of Vaisampāyana Charaka who founded the Ālambin and Pālangin Schools.
- (8) Kāmalinaḥ. It is the name of the third eastern School of the Charakas. The Purāṇas mention the founder as Kāmalāyani (Brabmāṇḍa Purāṇa, I.33.6).
- (9) Katha (IV.3.107). Pāṇini mentions the Kathas separately in IV.3.107; they were the Udīchya disciples of Vaisampāyana and probably belonged to the Panjab. In the time of Patañjali, the Katha School had attained wide celebrity (grāme grāme Kāṭhakam Kālāḥakam cha prochyate, Bhāshya, IV.3.101; II.315), and their text was considered to be of high authority (Katham mahat suvihitam, IV.2.66; II.285).

Pāṇini mentions the compound names Kaṭha-Kālāpāḥ and Kaṭha-Kauthumāḥ in the Gaṇa-pāṭha of VI.2.37, which indicates that these Schools were closely connected by their texts. The Saṁhitā of the Kaṭha School is extant. In the Charaṇa-vyūha two more local branches of the Kaṭha School are mentioned, viz. Prāchya-Kaṭhas and Kapishṭhala-Kaṭhas. Pāṇini derives some material from the text of the Kāṭhaka School (Devasumnayor-Yajushi Kāṭhake, VII.4.38). He also mentions Kapishṭhala as a gotra name (VIII.3.91, Kapishṭhalo gotre), which seems to have been applied to an offshoot of the Kaṭha School. Most of the Vedic Charaṇas were founded by

Rishis whose names were also used for gotra appellations. Megasthenes mentions the Kambistboloi (=Kapishṭhala) as a people in the Panjab through whose territory the river Hydraotes flowed. This would place the Kapishṭhalas in the country of the Kaṭhas (Kathioi) who resisted Alexander's march through their country. It does not seem to have any connection with the place-name Kapisthala or Kaithal in the Panjab (VIII.3.91, counter-example). The Samhitā of the Kapishṭhalas is extant to this day.

- (10) Kālāpa (IV.3.108). Kalāpin, a disciple of Vaišampāyana, belonged to the Udīchya country. The pupils of his School were known as Kālāpas (Kalāpino'ņ). Kalāpin appears to be himself a teacher of outstanding merit, since Pāṇini tells us that not only he himself but also his disciples became founders of new Vedic schools. Of the pupils of Kalāpin, the Kāšikā mentions four, vîz. Haridru, Chhagalī, Tumburu and Ulapa, who severally became founders of new Charanas.
- (11) Śyāmāyana. He was a pupil of Vaišampāyana who belonged to the north (*Udīchya*). The followers of his School were known as Śyāmāyaninaḥ. Śyāmāyana occurs as a gotra name in the Aśvādi-gaṇa (IV.1.110). The School is counted as one of the six sub-divisions of the Maitrāyaṇīyas.
- (12), (13) & (14). According to the Kāšikā the three Schools of the Charakas belonging to the Middle Country (Madhyamīya Charaṇas) were founded by Richāba, Āruṇi and Tāṇḍya. The School of Āruṇi, may be the same as that of Uddālaka Āruṇi, who along with his son, according to Patañjali, belonged to the Bharata country (II.4.66; I.493).
- (15), (16), (17) & (18). Schools of Haridru, Tumburu, Ulapa and Chhagalin. These were the four disciples of Kalāpī who founded independent Schools named after them as Hāridraviṇaḥ, Taumburaviṇaḥ, Aulapinaḥ, and Chhāgaleyinaḥ. The School of Chhagalin is specifically mentioned in sūtra IV.3.109 (Chhagalino dhinuk). Of the others little is known except that Yāska has once quoted from a text called Hāridra-

vika which may have been a Brāhmaṇa of this Charaṇa. All these four names occur together in the Mānava Grihyapari-sishṭa.

(19) Khādāyana. Pāṇini mentions the School of Khādāyana in the Śaunakādi-gaṇa, and both Kātyāyana and Patañjali take it to be a genuine reading. Patañjali says that Kaṭha was an antevāsī of Vaiśampāyana, and Khādāyana that of Kaṭha. Kātyāyana makes the important observation that Pāṇini's intention in mentioning the pupils of Vaiśampāyana and of Kalāpin separately was to restrict himself only to such names as denoted the seers (pratyaksha-kārin), i.e. only persons by whom a Vedic text had been promulgated (Kalāpi-Khādāyana grahaṇam jūāpakam Vaišampāyanāntevāsishu pratyakshakāri-grahaṇasya, Vār. on IV.3.104). Kātyāyana also states that only Chhandas works were called after the name of the Charaṇa or its founder, and not ordinary secular compositions like the ślokas of Tittiri which were called Taittirīya,

ŚUKLA-YAJURVEDA—The name Vājasaneya stands second in the Śaunakādi group (IV.3.106) which seeks to regulate the form Vājasaneyin to denote the Chhandas text of this School.

SĀMAVEDA—The Samhitā of this Veda existed in two forms, viz. the ārchika (the rich-text marked with sāman-accents) and the geya or songs. The ārchika is referred to in sūtra IV.3.72, and the geya in sūtra III.4.68 which the Kāśikā interprets with reference to the sāman songs. Pāṇini mentions Chhāndogya in the specific sense of the text belonging to the Chhandoga School of the Sāmaveda (IV.3.129). In sūtra VI.2.37, Pāṇini refers to Kārta students named after their teacher Kṛita, who according to the Vishnu Purāṇa (IV.19.50-52) was a Paurava prince, and disciple of the Sāmaveda teacher Hiraṇyanābha, king of Kosala. Kṛita is credited with the promulgation through his disciples of twenty-four Saṃhitās which were in circulation in eastern parts of India (yaś-chaturviṃ-śatin Prāchya-Sāmagānām Saṃhitās-chakāra). He did for

the Samaveda what Vaisampayana had done for the Yajurveda. The Kārta-Kauja pādi-gana mentions the names of about thirty Vedic Schools and the compound words indicate some kind of literary collaboration which made these pair names current in the language. Examples of such collaboration are preserved in the compound words Katha-Kālāpam, Katha-Kauthumam (mentioned as examples of II.4.3, Anuvade Charananam1); and Mauda-Paibbalada (Schools of the Atharvaveda, as examples of sūtra I.3.49 Anorakarmakāt); Kauthuma- Laugākshāh (both Schools of Samaveda; its Kauthumi Sambita being now extant); and Bābbrava-Sālankāyanāb (the latter a School of the Sāmaveda in the Vähika country or Panjab, Weber, H.I.L., p. 77 and p. 219 f. n.)2. The compound name Bābhrava-Sālankayana representing a Rigvedic School of Pañchāla and a Sāmaveda School of Vāhīka, is also known to Patañjali who observes: 'Why should you come between the Babhravas and the Śalańkayanas?' (Kim te Bābhrava-Śālankāyanānām antarena gateneti, Bhāshya, II.3.4; I.444). The Śālańkāyanas also became known as Trikāh, probably because of their being divided into three sub-schools (Bhāshya, V.1.57-58).

Amongst other Sāmaveda teachers Pāṇini mentions Sauchivṛikshi and Sātyamugri (sūtra IV.1.81), of whom the female descendants were called Śauchivṛikshī, Śauchivṛikshyā, and Sātyamugrī, Sātyamugryā respectively. Śauchivṛikshi appears as an ancient authority cited in the Śrautasūtra of Maśaka

Also Khādira Gribya Sātra, III.2.31, Kārshvan tu Kaṭba-Kauthumāḥ, referring to a rule of anadhyāya approved both by the Kaṭhas and the Kauthumas.

Also included in Nadadi-gana, IV.1.99, with the gana-satra Salanku Salankam cha; the name Salanki being given to Pānini himself in later writings; cf. also reference to the students of Salanki, Salanker-yūnaichhātrāh Sālankāh, Bhāshya, (IV.1.90; II.244).

Bäbhrava of Prächya and Śalańkäyana of Udichya were geographically separated and Patañjali's remark should have been addressed to a follower of an intervening Vedic School of the Bharata Janapada, most likely of Āruņi mentioned above.

(Weber, H. I. L., p. 77). The Sātyamugris seem to have been a sub-division of the great Rāṇayanīya School of the Sāmaveda, to whom Patañjali refers in connection with a phonetic peculiarity, viz. ardha ekāra and ardha okāra recognised in their Pārshada or Prātiśākhya work, (Bhāshya, I.22; also Āpišali Sikshā). The name of Rāṇāyani occurs in the Pailādi-gaṇa (II.4.59), and there can be no doubt that they were known to Pāṇini who knew one of their sub-divisions, the Sātyamugris.

Kāṇṭheviddhi ('a descendant of Kaṇṭheviddhi') mentioned after the names of the above teachers (IV.1.81) was possibly also a teacher of the Sāmaveda, whose name occurs as an authority in the Vainša Brāhmaṇa of the Sāmaveda (Vedic Index, I.146).

ATHARVAVEDA—Păņini mentions Ātharvaņika as a student devoted to the study of a work called Atharvan which was enounced by the Ŗishi Atharvan (VI.4.174). Patañjali accepts Atharvan and Ātharvaṇa as genuine readings in the Vasantādi-gaṇa (IV.2.63), which according to Pāṇini were names of texts for study (Tadadhīte tadveda). Patañjali definitely mentions the Āmnāya and Dharma of the Ātharvaṇikas. The compound name Manda-Paippalādāḥ in the Kārta-Kanjapādi-gaṇa represented two Schools of the Atharvaveda. Thieme attributes definite knowledge of the Atharvaveda to Pāṇini who mentions the form ailayīt (III.1.51) found only in AV., VI.16.3 (Thieme, op. cit. p. 64). The Jājalas, a School of the Atharvaveda founded by Jājali, are mentioned by Kātyāyana in a vārttika to sūtra VI.4.144.

OTHER VEDIC SCHOOLS—Pāņini also mentions by name certain other Vedic Schools, whose exact affiliations are not konwn, e.g. Taitila-Kadrū in sūtra VI.2.42 contains an allusion to the students of āchārya Titilin, also mentioned by Kātyā-yana in the aforesaid vārttika to VI.4.144 (Kāśikā, Taitili-Jājalināvāchāryan, tatkrito grantha upachārāt Taitili-Jājali-śabdābbyām abhidhīyate, tain grantham adhīyate Taitilāḥ, Jājalāḥ). Patañjali mentions Kraudāḥ and Kānkatāḥ as names

of Schools (IV.2.66; II.286), of which the former appear to be students of Kraudi mentioned in the Kraudyādi-gaṇa (IV.1.80). The Kānkata Brāhmaṇa is referred to in the Āpastamba Śrauta-sūtra (XIV.20.4) along with other unknown texts (Keith, J.R.A.S., 1915, p. 498). The Schools of Karmanda and Krišāśva which are known only from Pāṇini (IV.3.111), and those of Kāsyapa and Kauśika (IV.3.103) were confined to their sūtra works only, showing to what extent specialisation under the Vedic Charaṇas had advanced. The Kauśikas belonged to the Atharvaveda, but the affiliations of the other three are not known.

BRĀHMANA LITERATURE—The Brāhmaṇa works were on a footing with the Śākhās in one respect, viz. they were represented by Vedic Schools comprising students who studied those texts. It is possible that some Vedic Schools did not evolve their own independent Chhandas texts or Śākhās, but depended on their compilations of Brāhmaṇa texts only. Of the names of Vedic Saṃhitās given above, many are traced in citations as Brāhmaṇa works. Similarly the activity of some Schools as pointed out above was confined to the composition of sūtra works only.

BRĀHMAŅAS OF THIRTY AND FORTY ADHYĀAS—Pāṇini mentions two Brāhmaṇa works by the names of 'Thirty and Forty Adhyāyas', called Trainiśa and Chātvāriniśa respectively (Trimśach-chatvāriniśator-Brāhmaṇa samijūāyām ḍaṇ, V.1.62). The Kaushītakī Brāhmaṇa is of 30 and the Aitareya of 40 adhyāyas. As Keith states: "The Kaushītakī Brāhmaṇa and the Aitareya were both known to Pāṇini, who in his grammar (V.1.62) mentions the formation of the names of Brāhmaṇas with thirty and forty Adhyāyas. The same conclusion as to their relation to Pāṇini is clearly proved by their language which is decidedly older than the Bhāshā of Pāṇini, as Liebich has shown in detail for its verbal forms, and as is not disputed by any scholar.' (Keith, Rigveda Brāhmaṇas, H.O.S., Vol. 25, p. 42).

OLDER BRĀHMAŅA WORKS—In sūtra IV.3.105 Pāṇini refers to Brāhmaṇa and Kalpa works enounced by older Rishis (Purāṇa-prokteshu Brāhmaṇa-Kalpeshu). As examples of older Brāhmaṇa works, Pataṇjali mentions the Brāhmaṇa works of the Bhāllavins and the Śāṭyāyanins (IV.2.104; II.296), to which the Kāśikā adds that of the Aitareyins. The Bhāllavins were a well-known school of the Sāmaveda, and Śāṭyāyana figures in the Vamśa list of Jaimini whose Brāhmaṇa work known as the Jaiminiya Brāhmaṇa is still extant. Of all the lost Brāhmaṇa works that of Śāṭyāyana has been quoted most frequently (B. K. Ghosh, Fragments of Lost Brāhmaṇas, p. ii).

Talavakāra, a pupil of Jaimini, re-edited his teacher's work, which then became known as the *Talavakāra Brāhmaṇa*. It may be noted that Talavakāra is included in the *Saunakādī-gana* (IV.3.106), as an author of a *Chhandas* work or Vedic *Sākhā*.

The Hāridravika and the Śailāli Brāhmaņas were also older works known to Pāṇini, since Haridru as a pupil of Vaiśampā-yana is implied in IV.3.104, and the name of Śilālin occurs in sūtra IV.3.110. The Hāridravika Brāhmaņa was also known to Yāska (Nirukta, X.5).

Attention may also be drawn to Pāṇini's mention of the name Māshaśarāvin whose descendants were called Māshaśarāvayaḥ according to the suffix added to words of the Bābvādi group (IV.1.96). In the Chāndravṛitti, Māshaśarāvin is one word, and so also in Hemachandra and Vardhamāna (Māshaśarāviṇa risheḥ, verse 206), but in the Kāŝikā it is wrongly split up. The Drāḥyāyaṇa and Lāṭyāyana Śrauta-Sūtras cite an old authority saying that the Māshaśarāvins were organized as a Vedic school having their own Brāhmaṇa work (B. K. Ghosh, Frag. of Lost Brāhmaṇas, p. 112).

YĀJNAVALKA - BRĀHMAŅA—On sūtra IV. 3. 105 (Purāṇa-prokteshu Brāhmaṇa-Kalpeshu) Kātyāyana has a vārttika, Yājñavalkyādibhyah pratishedhas - tulyakālatvāt. 'Among the Brāhmanas and Kalpas proclaimed by the old, there is an exception with regard to Yajnavalkya and others, on account of contemporaneity and therefore Yajūavalkya's Brāhmanas are called, not Yājnavalkinah but Yājnavalkāni Brāhmanāni'. This passage has often been discussed. The Kāšikā considers Yājňavalkya as a recent author (achira-kāla). Kaiyata clearly interprets the vārttika in the sense that the Brāhmanas of Yājñavalkya were of the same age as those of the older authors like Śātyāyana, and in order that they may not come under the scope of Pānini's rule, Pānini should have made an exception in their case. In his opinion this omission on the part of Pāṇiṇi to exclude the name of Yājñavalkva from the operation of sūtra IV.3.105 is now made good by Kātyāyana. Patañjali has not made himself quite explict on the point, but in his remark, etānyapi tulyakālāni, the force of api becomes justified only when we understand Yājňavalkya as an ancient writer. Both Goldstücker and Eggeling accept this view (Pānini, p. 132; ŚB., Vol.I, Intro.). In view of this if we accept Yājñavalkya as an ancient teacher coeval in time with Śatyayana and other older authors of Brahmana works, the question remains why did not Yajñavalkya also found a Vedic school similar to other older seers and why the principle of Tad-vishayatā which, according to Pānini, was an invariable feature of the Chhandas and Brahmana texts, and in some cases also of the Kalpa sūtras of older Rishis, as Kāsyapinah, Kauśikinah, did not apply to the Brāhmana texts promulgated by Yājnavalkya. Another vārttika on sūtra IV.2.66 ordains that the adhyetri-veditri suffix is not added after the name of Yājnavalkya and others (Yājnavalkyadibhyah pratishedhah, II. 285). The question arises why the Yājñavalkya Brābmanas, if they were old, were not represented by their Charana students like the other older Brahmanas. The answer to this question largely depends on what we understand by Yājñavalkāni Brāhmanani; or as Eggeling has put it: 'whether or not the Yajnavalkāni Brāhmanāni form part of the text of the Śałapatha which has come down to us, and what exact portions of that text we have to understand by this designation'. He was inclined to the view that we should look for them in certain portions of the last Book (or Books) in which Yājñavalkya figures so prominently. Weber in his modified opinion accepted 'that it is to this Yājñavalkīya-kāṇḍa (XIV Book of Śatapatha) that the vārttika to Pāṇini (IV.3.105) refers when it speaks of the Yājñavalkāni Brāhmaṇāni as not purāṇa-prokta, but tulyakāla, i.e. 'of the same age as Pāṇini'. (H.I.L., p. 129). Weber was, however, not disposed to regard Yājñavalkya himself or the Śatapatha Brāhmaṇa as being of the same age with Pāṇini. The last Kāṇḍa was so named not because it was produced by Yājñavalkya himself, but because it gives prominence to him.

THE GENESIS OF THE SATAPATHA-The whole of the Satapatha Brāhmaņa of 100 adhyāyas is now generally attributed to Yājnavalkya, but the fact remains that the present text of the \$B. was a composite work made up of different portions of ritualistic texts. The grammatical literature throws some light on this textual problem of the SB. Its first nine Books consist of two broad divisions, Books I-V deal with Ishtis and Pasubandha, being a complete exposition of Havir-Yājña and Soma sacrifices. These were subjects of special study as shown by the example seshti-pasubandham adhite (Kāšikā, II.1.6). In these Books Yājñavalkya is cited as an authority. The next four Books deal with the Fire-ritual (Agnichayana) and refer to Śandilya more frequently than to Yajńavalkya. These Books were also separate subjects of study as shown in the expression sāgni adbīte (II.1.6, Kāśikā); or kashto'gņih, 'difficult to master is the Agni text' (VII.2.22). These nine Books contain sixty adbyāyas, and may be identified with Shashtipatha mentioned by Patañjali in an old Kārikā (II.284). Book X (Agnirahasya) deals with the same subject as the preceding four kāndas; and here also Sāṇḍilya and not Yājñavalkya figures as authority. The XI Book is called Sangraha, as it contains a summary of the preceding ritual. Kandas XII-XIV treat of miscellaneous subjects and are called Parishishta or Appendices. The last of these contains the famous philosophical discourse of Yājñavalkya. The text so constituted finds corroboration from the Mahābhārata which speaks of Yājnavalkya as the author of certain portions of the Satabatha described as (a) Rahasya (Ritual, Book X), (b) Sangraba (Book XI) and (c) Parisesha (Books XII-XIV; Santiparvan, 318.16). Sangraba mentioned by Pānini in the Ukthādi-gana (IV.2.60) as the name of a treatise, seems to refer to the XI Book of the Satapatha. A student of Sangraha was known as Sangrahika. These portions of the Satapatha, viz. Agni-Rahasya, Sangraha, and Parishishta may be taken to be what were known as the Yajnavalka-Brahmanas. The term Madhyama was applied to Book XII, showing that the Books preceding and following it were parts of one whole. The SB. was rather a voluminous text. Those who mastered its earlier portions consisting of 60 Chs. were designated as Shastipathika; while students studying its 100 Chs. were called Satapathika. The names Shashtipatha and Satapatha appear analogous to Bhārata and Mahābhārata existing side by side for some time.

From their very nature the last five Books of 40 Chs. could not form the basis of an independent Charana text, and therefore the rule of tad-vishayatā did not apply to them. These later portions attributed to Yājāavalkya were not given the same status as that of the older established works of Śātyāyana and Bhāllavin. Kātyāyana, however, as a follower of the Mādhyandina School of the Śukla Yajurveda and of its Brāhmaņa work the Śatapatha, did not consider the last five Books or 40 Chs. as of less authenticity in his time. He, therefore, joins issue with Pāṇini for not treating the Yājāavalkya Brāhmaṇas as purāṇa-prokta.

ANUBRĀHMAŅĀ (Supplementary Brāhmaņas). These supplementary texts formed special subjects of study by students whom Pāṇini calls Anubrāhmaṇā (Anubrāhmaṇād iniḥ, IV.2.62). The Kāšikā explains Anubrāhmaṇa as a work taking after a Brāhmaṇa (Brāhmaṇa-sadrišo'yam granthah).

Bhaṭṭa Bhāskara in his commentary on the Taittirīya Sambitā (I.8.1) refers to a portion of the Taittirīya Brāhmaṇa (I.6.11.1) as Anubrāhmaṇa (Weber, H.I.L., p. 82, note). Books XIV and XV of the Śānkhāyana Śrantasūtra were sometimes reckoned as parts of the Kaushītakī Brāhmaṇa, which were incorporated into its Kalpa by Suyajña. The commentator Ānartīya Brahmadatta calls them Anubrāhmaṇa (Śankh. S., XIV.2.3; Bhagavaddatta, Vaidika Vānmaya, I.113). Professor Caland discovered a special Brāhmaṇa work called Anvākhyāna, which belongs to the Vādhūla Sūtra and contains secondary Brāhmaṇas which may also be considered as Anubrāhmaṇa (Bhagavaddatta, op. cit., II.p.34). (Cf. Baudh. G. S., III.1.21-24).

UPANISHAD-It has been argued that Panini does not refer to the Upanishads. So far as he is concerned, the word Upanishad forming part of the Rigayanādi group (IV.3.73) serves the same purpose as if it were read in a sūtra. On the basis of linguistic evidence Liebich had come to the conclusion that 'Not only the Aitareya Brāhmana, but also the Bribadāranyaka Upanishad are certainly older than Pāṇini.' (Pāṇini, p. 37). The fact is that Panini shows an acquaintance not only with the Aitareya and Kaushitaki Brāhmanas (cf. V.1.62) and the Anubrāhmanas of a later date, but also with the Srauta Sūtras (IV.3. 105) and the Dharma Sutras which were developed as special subjects of study inside Charanas (IV.2.46). Pāṇini actually mentions the term Upanishad in one of the sūtras (Jīvikopanishadāvaupamye, I.4.79), where it denotes 'that which is secret.' This accords with its meaning known to Kautilya under the head Aubanishadikam. A term used originally as the name of esoteric religions texts, had acquired a pejorative sense by the time of Pāṇini. Keith also concludes on the basis of snitra I.4.79 that Panini was acquainted with the Upanishads (Tait. S., H.O.S., p. clxvii).

KALPA LITERATURE—Pāṇini refers to Kalpa works promulgated by ancient authors (Purāṇa-prokta Kalpa, IV.3.105), of which the Paiṇgī Kalpa and the Aruṇaparājī Kalpa are cited

as examples. Pāṇini refers to works of two older Rishis named Kāśyapa and Kauśika (Kāśyapa-Kauśikābhyām rishibhyām ninih, IV.3.103), which Kātyāyana takes to be Kalpa works. These were studied in Vedic Charanas by students called after them Kāśyapinah and Kauśikinah. It is also pointed out that the literary activity of these two old Schools was confined to their Kalpa Sūtras only round which centred a group of their students and teachers (Kāśyapa-Kauśika-grahaṇam cha Kalpeniyamārtham, II.286). We know of a Kauśika Sūtra of the Atharyayeda.

Patañjali in addition knows of a Parāśara Kalpa, which must have belonged to the Parāśara School of the Rigveda mentioned by Pāṇini.

But the exigencies of sacrificial religion required special treatises bearing on different parts of the ritual, and Pāṇini mentions several types of commentaries written with the avowed purpose of bringing sacrificial ritual within the easy reach of priests. Special commentaries are mentioned on important Soma sacrifices, and on the different kinds of yajñas, such as the Pākayajña, Haviryajña, etc. (IV.3.68). The preparation of the sacrificial cake offered to the deities was of great practical importance and special handbooks called Purodăsika explaining its details were written. Similarly others known as Paurodāšika were compiled with a view to explain the particular mantras that were used in the Purodasa ceremony (IV.3.70). Commentaries on the Adhvara sacrifices were called Adhvarika, and those which treated of preparatory ceremonies preceding regular sacrifices were known as Paurascharanika (IV.3.72). The significance of the commentary called Prathamika is not clear; possibly it treated of Purascharana rites (IV.3.72). Illustrating the word dvyachah of this sūtra the Kāšikā gives two interesting examples, viz., Aisbṭika and Pāśuka, the former was a commentary on the Darśa-Paurnamasa Ishtis and the latter on the animal sacrifices. These two are covered respectively by Books I-II and III-V of the Śatapatha Brāhmaṇa. It appears that the course of sacrificial studies was planned topically, for on sūtra II.1.6 the Kāśikā speaks of a student studying the portions known as Ishṭi-paśubandha (seshṭi-paśubandham adhīte). The advanced course in sacrificial lore included the Fire ritual or Agnichayana (Books VI-IX of Śatapatha) and the expression sāgni adhīte pointed to the final stage in the study of that subject.

LITERATURE ON RECITATION—Proper recitation of Vedic texts (pārāyaṇa, V.1.72) required methodical training. It involved mastery of the Pada and Krama texts as implied in Pāṇini's words Padaka and Kramaka to denote students devoted to such studies (IV.2.61). Pāṇini also refers to the Pada text of the Rigveda by Śākalya (I.1.16), and to a work known as Ārgayaṇa, which was a commentary on the methods and details of the Pārāyaṇa of the Rigveda.

There are names of other phonetical works treating of Vedic pronunciation and recitation. The Ukthādi-gaṇa (IV.2.60) refers to students of Saṃhitā, Pada, and Krama. The word Krametara, was applied to the recitation of texts 'other than Krama'. The technical term for instruction and exercise in recitation was charchā (III.3.105; also in the Ukthādi group). The Charaṇavyūha refers to instruction in recitation depending on (1) charchā (exercise), (2) śrāvaka (the teacher reciting), (3) charchaka (the pupil repeating), and (4) śravaṇīyapāra (completion of recitation). A student who qualified in charchā (regulated recitation) was called charchika (IV.2.60).

Pāṇini uses Pada-vyākhyāna for a text explanatory of the Pada-pāṭha, and its derivative Pāda-vyākhyāna denoted a commentary on such a text (Rigayaṇādi-gaṇa, IV.3.73). Such a commentary was intended to explain every word of the Vedic text, similar to the style of the Śatapatha Brāhmaṇa explaining the first eighteen Books of the Yajurveda. These commentaries were also known as Anupada works, of which a student was

called anupadika (IV.3.60). Saunaka mentions the Anupada work of the Yajurveda, which Mahīdāsa defines as the work which explained the text word for word (Anupade anyat-padam kartavyam). One of the Sāma sūtras is Anupada-sūtra in ten prapāṭhakas, which explains the obscure passages of the Paūchaviniša Brāhmaṇa and of the Shaḍviniša Brāhmaṇa, step by step (Weber, H.I.L., p. 80).

UKTHA-The Uktha treatise mentioned at the head of the Uktbadi group (IV.2.60) of which the students were called aukthika, appears to be a work partaking of the nature of Pārsbada works of the Sāmaveda. Patanjali writes: 'What are Ukthas? Samans are the Ukthas. If so, all chanters of Sāmans will be called aukthika. No, there is no fault if we take Uktha in the sense of a work dealing with Uktha' (tādarthyāt tāchchabdyam, Bhāshya, IV.2.60; II.283). Kaiyata following Patañjali informs us that one of the Sāma-lakshana treatises was known as Uktha. A selection of Rik verses for the purpose of recitation suited to each particular occasion bears the name sastra to be recited by the Hotri priest, and a similar selection of different Samans made into a group to be recited by the Udgătā priest was called Uktha (from vach, to speak) (Weber, H.1.L., p. 67). It must have been the task of the Samaveda teachers to fix rules for the making of Uktha songs. The texts which dealt with this subject were also called Uktha, and must have been considered important among the lakshana works of the Samaveda.

IYOTISHA—Some works on Jyotisha were possibly known, as we find reference in the sūtras to belief in divination from bodily signs (III.2.53), and also to fortune-telling by sooth-sayers (I.4.39, Rādhīkshyor-yasya viprasnah). The mention of utpāta, samvatsara, muhūrta and nimitta as subjects of study in the Rigayanādi-gaņa (IV.3.73) indicates the study of astronomy and omens. Early Buddhist literature is full of references to divining by means of signs (nimittam) and fortune-telling from marks on the body (lakkhanam, the word being

used in an identical sense by Pāṇini in III.2.52-53), which were forbidden for monks. Five topics of study included in the Rigayanādi group (IV.3.73) are also found in the Brahmajāla Sutta, viz. (1) Nimitta, (2) Uppādo (=utpāda in the gana), (3) Angavijjā, (Angavidyā), (4) Vatthuvijjā (determining whether the site for a proposed house is lucky or not; Vāstuvidyā in the gana), and (5) Khattavijjā (=Kshatravidyā of the Gana-patha which is also mentioned in the list of sciences in the Chh. Up., VII.1.4) (cf. Brahmajāla Sutta, Rhys Davids Trans. pp. 16-18, f.n.). Buddhaghośa renders Uppāda as 'the portents of the great ones, thunderbolts falling, and so on' caused by divine agency (cf. Jātaka, I.374; and commentary on Uppāda). Kautilya mentions the naimittikas and mauhūrtikas (Arth., p. 23), and Megasthenes also refers to experts who 'gathered together at the beginning of the year to forewarn the assembled multitudes about droughts and wet weather, and also about propitious winds', (Diod. II.40, M'Crindle, Frag.I). These latter correspond to the Samvatsarikas of Panini (IV.3. 73, Gana-pātha).

PHILOSOPHICAL LITERATURE—The Paninian epoch was already preceded by intense philosophical activity. The implications of his reference to philosophers of the Astika, Nastika, and Daishtika schools (IV.4.60) have been shown above, the last one being represented by the followers of Maskari Gosala, and the second by such thinkers as the Lokayatikas. The Lokayata doctrine was of high antiquity and its second place in the Ukthādi-gana may be an authentic reading. Nyāya, mentioned thrice (III.3.122; III.3.37, IV.4.92), stands not for the philosophical system of that name, but for justice or customay law; however, some knowledge of its dialectical terminology is foreshadowed in the sūtra Nigrihyānuyoge VIII.2.94 (cf. Nyāya, V.2.1; V.2.23. For nigribya as a term of vāda or disputation, cf. also Āranyaka-parva, 132.13; 17). The term Mimāinsã occurs in the Gana-patha in relation to its students called Mimāmsaka, which points to the subject being studied as a

system of philosophy (IV.2.61, also III.1.6, mimäinsate). BHIKSHU SŪTRAS-Pāṇini refers to two Vedic Schools of Bhikshu sūtras founded by Pārāśarya and Karmanda (IV.3.110-111), their students being called Pārāśrinah and Karmandinah respectively. Weber sees in it an allusion to pre-Buddhist Brahmanical mendicants (H.I.L., p. 305, footnote). We know nothing of the work of Karmanda, but the sūtras of Pārāšarya may have been the Vedanta sūtras which were based on the philosophical doctrine developed in the Upanishads. On the other hand it is also probable that the Bhiksha-sūtras of Pārāśarya referred to some Sāńkhya treatise. Pańchaśikha is spoken of a Bhikshu and of Parāśara gotra (Śāntiparva, 320. 24), and being a historical teacher of outstanding merit in the Sānkhya tradition is believed to have written a work in prose Sutras in which his doctrine leafed more towards Vedanta. (Keith, Sānkbya System, p. 49). The Chinese tradition makes him the author of the Shastitantra itself (ib. p. 48).

In either case these early texts must be regarded as the product of a school rather than that of an individual author. The School gave a name both to its members and literary productions. As Pāṇini informs us, all Chhandas and Brāhmaṇa works, two Kalpa-sūtras, two Bhikshu-sūtras, and two Natasūtras derived their names after the founders of schools, which is the essence of the tad-vishayatā principle. Texts attributed to individual authors like Apisali and Pāṇini naturally did not admit of growth like those produced in the Vedic schools, which latter incorporated the subsequent graftings on the original text. We may recall that the Pārāśarya school was originally affiliated to a Charana of the Rigueda in the Sākhā of the Bāshkalas. Parāšara (father of Pārāšarya) is also mentioned as the founder of a School of Kalpa-sūtras of which the students were called Pārāśarakal pika, as stated by Patañjali (IV.2.60; H.284). These latter were called Pārāsarāh in distinction to those studying the Bhikshu-sūtras and called Pārāšarinah. NATA-SUTRAS-The word Nalya occurring in sulra (IV.). 129) refers to some treatise for the use of actors. As the Kāšikā explains, the Nāṭya text had the status of an āmnāya pointing to its growth under a Vedic Charaṇa. We have already referred to the development of Naṭa-sūṭras in Pāṇini's time under the Schools of Śilālin and Kṛiśāśva (IV.3.110-111). The present treatise on dramaturgy known as the Nāṭya šāstra of Bharata describes the Naṭas as Śailālakas. The corresponding Vedic term used by Pāṇini is Śailālinaḥ Naṭaḥ. It seems that Bharata's Nāṭyaśāstra was the product of the dramatic school of Śilālin which originated in the Rigvedic Charaṇa founded by that teacher, who was also the author of a Brāhmaṇa work called Śailāli Brāhmaṇa cited in the Āṭastamba Śrauta Sūṭra VI.4.7.

Patañjali speaking for later times refers to Nața teachers (ākhyātā) of dance initiating novices (ārambhakāḥ) in the art not through texts (granthārtha), but by their direct method of stage-acting (I.4.29; I.329, ātaschopayogo yadārambhakā raṅgam gachchhanti naṭasya iroshyāmaḥ). This instruction, however, did not merit the honorific epithet upayoga, a term reserved for instruction under the approved religious system of teachers and initiated pupils.

Pāṇini mentions nāndikara (III.2.21), a person who sings the Nāndī or prologue to a drama.

ĀKHYĀNA AND KĀVYAS—Pāṇini refers to ślokas and gāthās, and to their authors as ślokakāra and gāthākāra (III.2. 23). He also mentions Ākhyāna or the literature of stories (VI.2.103), as examples of which Patañjali and the Kāšikā cite texts dealing with the legends of Rāma (i.e. Parašurāma) and Yayāti, each consisting of two parts, called Pūrvādhirāma, Aparādhirāma, and Pūrva-yāyāta, Apara-yāyāta respectively. The latter pair of names occurs in the colophon of the Yayāti legend in the Mahābhārata (Ādiparva, Poona, Chs. 70-80 Pūrva-yāyāta, and 81-88 Uttara-yāyāta).

As to kāv yas Pāṇini mentions (1) Sisukrandīya, (2) Yamasabhīya, and (3) Indrajananīya as actual works (IV.3.

88). The name Sisukrandiya suggests that the poem related to the Birth of Krishna, literally 'a work dealing with the crying of child (sisu, Krishna at the time of birth). The second name was probably that of a drama dealing with the subject of Yama's Assembly (Yama-sabhā). The third name Indrajananiya was that of a work dealing with the subject of Indra's birth and his slaying of the demon Vritra, being an ancient legend in which Tvashtā and Dadhīchi also played a part. MAHĀBHĀRATA—Pāṇini knows of a Bhārata and a Mahābhārata, (VI.2.38), and refers to its three principal characters, Vāsudeva, Arjuna (IV.3.98) and Yudhishthira (VIII.3.95). This admittedly old reference to the Epic throws light on its evolution. In a well-known passage of the Asvalayana Grihyasūtra, the two names, Bkārata and Mahābhārata are similarly mentioned together (III.4.). Utgikar after examining the passage critically observed that 'the mention of the Bhārala and the Mbb. in the AG Sutra is to be held as textually genuine and justified by other important considerations' (Mbb. in AG Sūtra, Proc. 1st Oriental Conf., Vol. II, p. 60). The Bhārata was the original work of about 24,000 stanzas attributed to Vyāsa, which was preserved and popularised by the bards. The Bhrigus, later, expanded the Bhārata adding to it considerable political, philosophical and religious matter (Dharma and Niti) and legends (Upākhyanas) (V. S. Sukthankar, The Bhrigus and the Bharata, a text-historical study, ABORI., XVIII, pp. 15-76). Aśvalāyana's mention of the Epic as a text to be recited may be due to the fact that Aśvalāyana was a direct pupil of Saunaka whose name is closely associated with the final redaction of the Mababbarata.

## CH. V, SECTION 4. GRAMMATICAL DATA

VYĀKARAŅA—The Ashtādhyāyī extant as the only early Vedānga text on Vyākaraņa supplies some reliable data regarding the history of grammatical studies in ancient India.

Grammar is called both Śabda and Vyākaraṇa, and a grammarian śabdakāra (III.2.23) and vaiyākaraṇa (VI.3.7). PREVIOUS GRAMMARIANS—The period between Yāska and Patañjali witnessed intensive creative activity in the field of grammar. No less than sixty-four teachers are cited as authority in the Prātišākbyas, Nirukta and Asbṭādbyāyī (cf. Max Muller, History of Skt. Lit., p. 142, where a list is given.) Yāska regards Nirukta as a study supplementary to grammar (Vyākaraṇasya kārtsuyam), which position remained unchanged until the time of Patañjali who found grammar to be the foremost of the Vedāngas.

Pāṇini mentions by name the following authorities (pūrvā-chāryas) whose works he had most probably consulted:

- (1) Śākaļāyana (III.4.111; VIII.3.18; VIII.4.50), a grammarian, who is quoted by Yāska in support of the view that all nouns are derived from verbs. His dominant position is indicated by an illustration preserved even in the Pāṇinian system, e.g. Anusākaļāyanam vaiyākaranāh (Kāśikā on I.4.86), 'all grammarians rank next to Śākaļāyana'.
- (2) Šākalya (1.1.16; VI.1.127; VIII.3.19; VIII.4.51), said to be the author of the Padapāṭha of the Rigveda; the iti used by him in the Padapāṭha is mentioned by Pāṇini as anārsha, non-Vedic (I.1.16), and is also referred to by the term upasthita (VI.1.129). Pāṇini mentions a padakāra in sūtra III.2.23, who may be Sākalya.
- (3) Āpišali (VI.1.91). He was an important predecessor of Pāṇini. Patanjali refers to his students in the compound

Apišala-Pāṇinīya-Vyādīya-Gautamīyāh, stating that these names were arranged in a chronological sequence (VI.2.36; III.125). The Kāšikā records that Apišali's treatise dealt with long and short vowels (Apisaly-upajnam gurulaghavam, V1.2.14).

(4) Gārgya (VII.3.99; VIII.3.20; VIII.4.67). His view is cited by Yaska on nouns being verbal derivatives. The Rih

and Yaju Prātisākhyas also refer to him.

(5) Gălava (VI.3.61; VII.1.74). His name occurs in the Nirukta and the Aitareya Āranyaka (V.3). The Śaiśiri Śikshā refers to Gālava as a pupil of Śaunaka, and to Śākaţāyana of Šaiširi (Pt. Bhagavaddatta, Vaidika Vāinmaya, I. 83).

(6) Bhāradvāja (VII.2.63). This school continued its activity much longer, as Patañjali refers to its vārtlikas several times. Bhārdvāja is also cited in the Rik and the Taittirīya Prātišākbyas.

(7) Kāšyapa (1.2.25; VIII.4.67); he is also cited in the Yaju and the Taittiriya Prātišākhyas. (Cf. Šāntiparva,

342-89).

(8-10) Senaka (V.4.112); Sphotāyana (VI.1.123); Chākravarmaņa (VI.1.130). The names of these teachers are not found outside the Ashtadbyayi.

Pănini also refers to the views of Teachers in general Āchāryāṇām, (VII.3.49; VII.4.52); including both the Eastern (Prāchām) and the Northern (Udīchām) grammarians.

PŪRVĀCHĀRYA-SŪTRAS-Pāṇini by incorporating the grammatical contributions of previous writers into his system practically threw them into oblivion. There are, however, a few exceptions. Kātyāyana refers to a pūrva-sūtra in his vārtlika on IV.1.14 (II.205), and the comments of Patanjali on it suggest that Pāṇini's sūtra (Anupasarjanāt) was borrowed from an older grammarian. Patañjali quotes a kārikā referring to a pūrva-sūtra in which varņa was designated as akshara (Bhāshya, 1.36).

Kaiyata in his comment on II.3.17 gives an alternative

reading of the sūtra as it existed in the grammar of Apisali (Manyakarmany-anādara upamāne vibhāshāprānishv-iti Āpisalir-adbite sma). The source of Kaiyata appears to be some older commentary. Again, Patanjali in his comment on a vārttika to sūtra 1.3.22 makes an illustrative statement, viz. Astim sakāram ātishthate, which is borrowed by the Kāšikā. The Nyasa attributes this peculiarity of taking the root as as only s (sakārmātram) to āchārya Āpiśali. Patañjali commenting on a slokavārttika referring to Apisali-vidbi (IV.2.45; II.281) quotes a sulra of that grammarian, Dhenuranani (kam ut pādayati), which proves that the anubandba in nañ retained by Pāṇini was in fact invented by his predecessors. The grammar of Apisali must have continued along with that of Pāṇini upto the time of Patanjali at least. Kātyāyana refers to students studying the work of Apisali (Pūrva-sūtranirdeso vā Apisalamadbīta iti, Kāt. IV.1.14.3), and Patanjali even speaks of female Brāhmana students of the Apisali school (Apisalā Brāhmanī). The Kāšikā notes a different reading of Pāṇini's sūtra VII.3.95, which even Patanjali had not noticed (Apišalāšturustušamyamah sarvadhātukāsu chehhandasīti pathanti, Kāśikā).

A sūtra of Kāśakritsna was known to Kātyāyana according to Kaiyata (Kasakritsnasya 'Pratyottara-padayoh' iti sūtram, II.1.51, vār). His grammatical work was named after him as Kāšakritsna, which consisted of three adhyāyas (Bhāshya, I.12; Kāšikā V.1.58), Again, Kātyāyana's Raudhyādi for Pāṇini's Kraudyādi (IV.1.80) was according to Kaiyata taken from some pūrva-sūtra. These references to previous grammarians are, however, few and do not give sufficient data for assessing Pāṇini's indebtedness to them. The ancient illustration Pañcha-vyākaraņah, (Kāšikā on a vārt. to IV.2.60), 'a student of Five Grammars', must have had in view the grammatical treatises of Sakatayana, Apisali, Bhardvāja (=Indra system), Pānini and Kāšakritna, these names being obtained by omitting Chandra, Amara and Jainendra from the traditional list of eight.

GRAMMATICAL TERMS BEFORE PĀŅINI (PŪRV-ĀCHĀRYA-SAMJNĀS)—Some of the technical grammatical terms from Pāṇini's predecessors were preserved in his time and later, as seen specially in the vārttikas of Kātyāyana. A list of such technical terms, some of which have also been used by Pāṇini in the Ashṭādhyāyī, is given below:

- 1. Adyatani=Lun (vārt. on II.4.3; III.2.102).
- Abbinishţāna (VIII.3.36)=visarjanīya (Dr. Sūryakanta, Punjab Oriental Research Journal, Vol.I, pp. 13-18 cites all the relevant authorities).
  - 3. Ātmanebhāshā-Ātmanepada (Bhāshya, VI.3.7-8).
  - 4. Ārdbadbātukā Ārdbadbātuka (II.4.35; I.484).
  - 5. Ān=ṭā (III.343,387; VII.3.120).
- 6. Upagraha=Ātmenepada (Kaiyaṭa on vārt. 5 on III.2. 127; II.130).
- 7. Upachāra—the s in place of visarga in ayaskumbha, etc. (Kāt. on IV.1.1., Pat. II.193, explained by Nāgeśa; also Kāśikā, VIII.3.48). The term is known to the Rik Prātišākhya and also Atharva Prātišākhya, Viśvabandhu edn., III.1.7).
- 8. Upasthita—anārsha iti, i.e. iti of Padapāṭha. This term is used by Pāṇini without explaining it (VI.1.129). Patañjali explains its meaning as anārsha iti of I.1.16. This seems to be a technical term peculiar to the Rik Prātišākhya (X.12, Upasthitain seti-karaṇam. Cf. also vārt. on VI.1.130).
- 9. Ghu=uttarapada (Bhāshya, III.229, 247, 318; kimi-dam ghoriti? uttarapadasyeti). Kielhorn suggested that Ghu must be Dyu (Ind. Ant., XVI.106).
  - 10. Kalma-aparisamēpta karma (Bhāshya, I.336).
- 11. Charkurīta—yan-lunanta (Bhāshya on VI.1.6 and VII.4.92, quoting a verse explained by Haradatta; also Nirukta, II.28; and Dhātu-pāṭha at the end of Adādigaṇa).
- 12. Chekriyita=yan (Pat. II.232; Kaiyata; a term for intensive).
  - 13. Du=Shat saminā (vārt, 43 on I.4.1; 304).

- 14. Taņi=samjnā-chhandasoḥ (Pat. II.99). Pāṇini prefers to use the longer term samjnā-chhandas in sūtra VI.3.63 in place of the shorter taṇi.
- 15. Dhrauvyārtha—akarmaka. Pāņini uses it in III.4.76 without explaining its meaning (cf. śloka-vārttika on I.4.50, dhravayukti, which the Pradīpa explains as akarmaka).
- Nāma=Prātipadika, an old popular samijnā used by Nirukta I.1; and also Pāṇini, IV.3.72 who refers to it in connection with the name of a treatise called Nāmika.
- 17. Nyūyya=utsarga (Pat. I.439; Kaiyata. Cf. also Rik. Prāt. explained by Uvaṭa as Utsarga).
- 18. Parokshā=liţ or Paroksh-bhūta (śloka-vārt. on 1.2. 18; I. 199; Kaiyaṭa).
- Prakrama=nrah-kantha-śirah, places of utterance or sthāna (vārt. on 1.2.30, explained by Patañjali, 1.207).
- 20. Pratikantha—nipātana, an irregular formation (Rik. Prāt., I.54). Pāṇini has used it in connection with a taddhita suffix, pratikantham gribnāti, prātikantikaḥ, IV.4.40, where it is juxtaposed with paurvapadika and auttarapadika and may denote a grammarian or his work dealing with the subject of nipātana, words of irregular formations such as prishodarādi, which according to Pāṇini should be learnt in the same regular form in which they were taught (yathopadishṭa, VI.3.109).
- 21. Pratyanga==antaranga (Bhāshya, VI.3.138; Kielhorn, Ind. Ant., XVI.p.102).
  - 22. Prasava=pumān, masculine (Bbāshya, 1.245).
  - 23. Prasarana samprasarana (vart. 14 on I.1.3; I.50).
- La=luk (Bhāshya, V.2.37; as explained by Haradatta on II.2.37, lukaḥ esha pūrvāchārya-samjuā).
- 25. Laḥ=lakāras. Pāṇini uses the term in III.4.69 (cf. the śloka-vārttika on I.4.51; I. 335). The system of lakāras appears to be Pāṇini's own creation in place of the older terms like Bhavantī (Laṭ), Śvastanī (=Lnṭ, Kāt. on III.3.15), Bhavishyantī=Lṛiṭ, Kat. III.3.15), Naigamī (probably Leṭ, cf. Atharva Prāt., II.3.2), Preshaṇī (Loṭ. Atharva Prāt., II.1.11;

II.3.21), Hyastani (Lan, Atharva Prāt., III.2.5), and Adyatani (Lun, Kāt. II.4.3.2; III.2.102.6; VI.4.114.3; and Atharva Prāt., II.2.6).

Vyakti=linga (used by Pāṇini în the sūtra-kāṇḍa,
 1.2.51, but not explained, as perhaps it was not necessary for he

has rejected the sutra).

27. Vināma-ņatva (Kāt. on Śivasūtra 3-4; I. 25).

28. Vṛiddba—gotra; Patañjali points out that Pāṇini has borrowed this term from an earlier grammar (Bhāshya, I.248 on I.2.68), and Kāšikā also cites an old sūtra in which it had been used (Apatyam antarbitain vṛiddham, I.2.65). Kātyā-yana also uses it in a vārt. on IV.1.90, and his definition of gotra on IV.1.163 appears to be cited from an earlier grammar.

29. Sainkrama—a term for kit and nit suffixes, prohibiting guna and vriddhi (Bhāshya, 1.48 and 1.1.3 as explained by Nāgeša). The word is not met with elsewhere (Kielhorn, I.A., XVI.102; cf. Kāšikā, I.1.6, sainkramo nāma guna-vriddhi-þratishedha-vishayah).

30. Sandbyakshara=e, o, ai, an (Kāt. on Šivasūtras 3-4; I.2.4; where the other term samanākshara for the simple vowels

is also used).

31. Sasthāna=jihvāmūlīya (Kāt, II.4.54.8, as explained

by Kaiyata).

32. Hrāda—anuranaņa-ghosha, sound vibrations following the uttering of a letter (Kāt. hrādavirāmaḥ sanihitā, I.4.109. 7; I.355).

grammatical literature sheds light on the syllabus and method of its study. Kātyāyana raising the question as to what constitutes grammar, replies that word-forms (lakshya) and rules of formation (lakshana) together make up grammar. The earlier method was naturally that of learning each word by itself, as Patañjali has observed (Pratipadoktānāni šabdānāni šabdānāni šabdānāni sabdanāni provācha, L5). Formulation of rules came later. The composition of grammar in the form of sūtras as

lakshanas or rules attained its culmination in Pāṇini, who also refers to students following the earlier method of studying individual words and called Prātikanthika (IV.4.40; where Pratikantha pratipadika). Both these methods seem to have obtained simultaneously up to the time of Patanjali, who speaks of students called lākshyika (studying words) and lākshanika (studying rules) (IV.2.60). Pānini himself refers to two principal divisions comprising between them the full course on grammar, viz. Nāmika treating of nouns, and Ākbyātika of verbs (IV.3.72). The Kāsikā refers to commentaries on nouns (Saupa), Verbs (Taina) and Verbal Nouns (Karta, IV.3.66). These commentaries were meant as aids to the topical study of nouns (Subanta), Verbs (Tinanta) and Verbal Nouns (Kridanta). In the first two the order of Paninian sūtras must have been readjusted. Perhaps these names carry back the tradition of the arrangement of grammatical words as found in the Prakriyākaumudī and Siddbāntakaumudī to a period anterior to the Kāsikā. Some key-words throwing light on grammatical syllabus are mentioned by Patanjali. He refers to a work called Sāmastika which dealt with compounds, corresponding to Book II, Chaps. 1-2 of the Ashtadhyayi. In place of the term Samasta, known to the Atharva Prātišākhya (III.4.3), Pānini uses Samāsa.

Patañjali mentions Nātānatika as a work dealing with Accents (Bhāshya, II.295; Kāšikā, IV.3.67). Nata and Anata were pre-Pāṇinian terms, Nata standing for Anudātta and Anata for Udatta. Panini uses the term Sannatara (II.2.40), in place of the older term Nata. The Natanatika chapter counted as a separate topic in the syllabus. Book VI of Pānini, Chapters 1 and 2, are equivalent to Nātānatika of the older grammars. The Kāsikā refers to this topic also as Sauvara (VII.3.4).

The Kāsikā (IV.3.67) cites the names of two more chapters viz. (1) Sāmbita, dealing with Sambitā or Samdbi, euphonic combinations, corresponding to VI.1.72-134 and VIII.4.40-65; and (2) Shātva-natvika, dealing with cerebralization of dental na and sa, corresponding to Ashtādhyāyī VIII. 3.55 to VIII.4.59. This Pāṇinian chapter is a model of compact topical treatment in a grammar. The Riktantra of the Sāmaveda also includes a similar but loosely strung section on cerebralization.

Another important chapter dealt with the vowel changes in words caused by the presence of suffixes, and described as Guṇa and Vriddhi. These chapters were known as Guṇāguṇa (Ukthādi gaṇa, IV.2.60; aguṇa, Vriddhi) of which the students were called gauṇāguṇika. The Kāšikā also acquaints us with some theoretical studies like Gauṇa-mukhyam, dealing with Pradhāna and Upasarjana (IV.3.88), and Śabdārthasambandhī-yam (IV.3.88). Completing the prescribed course of study was called vritta (Neralbyayane vrittam, VII.2.26), e.g. vritta guṇo Devadattena, 'Devadatta has mastered Guṇa' as part of his grammatical studies.

The Kāśikā informs us that the subject of lengthening and shortening of vowels formed the subject of a treatise called Guru-lāghavam, first promulgated by Āpiśali (Āpiśalyupajñam Guru-lāghavam, VI.2.14; IV.3.115). That treatise is now lost, but its contents seem to have been used in Pāṇini's work (cf.

Keith, H.S.L., p. XXV).

PĀŅĪNI AND LOKA (CURRENT LANGUAGE)—Pāṇini's regard for current language bearing on grammatical formations is reflected in the sūtra-kāṇḍa, I.2.51-58. Generally reluctant to express his opinion on controversial matters which engaged the attention of previous grammarians and etymologists, Pāṇini here shows an exception by presenting the pūrvapaksha and the siddbānta in defence of his fundamental grammatical position, i.e. his article of faith as a grammarian. He stoutly defends Saṇiṇā or LOKA, i.e. current social and linguistic usage, as the best guide and standard to decide theoretical definitions and questions. The authority of Saṇiṇā or usage of words must always supersede that of Yoga or meaning dependent on derivation (saṇiṇā-pramāṇa, I.2.53-55). It may be asked whether

the treatise on grammar should also deal with such matters as determining the exact significance of time-denoting words, social grades, etc.; as for example, 'How much is a drona?', 'What is a yojana distance?', 'What are the relative positions of a principal and agent?', etc. There were enthusiasts who thought that in the absence of exactly knowing which twenty-four hours constitute adya, 'today', grammatical rules cannot be correctly applied. Pānini utters a note of warning against such extreme theorists and invokes the invariable authority of usage, both linguistic and social (Tad-asishyam saminā-pramānatvāt, 1.2.53). For example, it may be a fact that the name Panchala was given to a country because of the first settlement of the Panchala Kshatriya tribe in that region. This 'land-taking' stage was now a thing of the past. Panchala was now understood as the name of a janapada without reference to the Kshatriyas who inhabited it. A grammarian should face facts. It is unnecessary to seek the derivation of Panchala janapada from the Panchala tribe. Similar is the case with hundreds of other place-names which were originally derived from historical conditions which no longer existed and so those names lost their original derivative sense. This point of view gives to the grammarian a realistic outlook by which he is able to build up from a living language its system of grammar.

Thus, instead of tying himself down to the treatment of age-old topics, such as accentuation, cerebralization, vocalization, letter-coalescence, formation of compounds and declension of nouns and verbs, Pāṇini extended the scope of his investigation to include all kinds of words taken from the different departments of language and current usage. The result of this approach is visible in Pāṇini's exhaustive treatment of the Kridanta and Taddhita suffixes. He investigated in great detail the manifold vrittis or meanings expressed by words through suffixes. Yāska informs us that the subtle distinctions of meanings of words are not always free from doubt (višaya-

vatyo hi vrittayo bhavanti, Nir. II.1). In his linguistic laboratory, as it were, Pāṇini collected and classified all possible meanings in which words were used, and grouped them under suitable headings as bita, sampādi, arba, alamartha (VI.2.155), krita, rakta, vikāra (VI.3.39), anka, sangha, lakshana, dharma, and several hundreds of others. The activities of all grades of persons in society, such as a musician, hunter. shoe-maker, cook, salesman, trader, ferryman, author, mendicant, devotee, farmer, cowherd, prince, councillor, etc., were analysed and taken note of grammatically. He thus viewed Loka in all its comprehensiveness as the primary source of material for a living grammar. This attitude towards the reality of life resulted in the secularization of knowledge and is patent in the Ashtādhyāyī which for the most part served the Bhāshā or the spoken language of Pāṇini's time and was not tied to the chariot-wheels of Vedic schools. Kātyāyana and Patañjali also frequently appeal to current usage as the final authority (Loka-vijnānāt siddham, I.1.21; I.77; I.1.65; I.171). SANSKRIT AS A SPOKEN LANGUAGE-The question whether Sanskrit was the spoken language in Pāṇini's time or only a literary language is often raised. Grierson with his eyes fixed more on the language of the Asokan inscriptions argued that if Pāṇini was legislating for the spoken language of his days, how could it have so changed by the time of Asoka in such a short time (Ind. Ant., Vol.XXII,222). On the other hand Goldstücker, Keith and Leibich (Pāṇini, p. 48) hold that Pāṇini's Sanskrit was the spoken language used by the cultured classes of his time. Grierson does not appear to have wholly taken into account the internal evidence of the Ashtādhyāyī. As Keith puts it: 'Panini has rules which are meaningless for any thing but a vernacular, apart from the fact that the term Bhāshā which he applies to the speech he teaches has the natural sense of a spoken language.' (H.S.L., p. 9). Thus Pāṇini includes in his purview linguistic forms relating to questions and answers (praina, III.2.117; prishta-prativachana, III.2. 120), praise and censure (prasamsā-kutsā), calling from a distance (durād-dbūte), greeting (VIII.2.83-86), expressions in oxytone for censuring an opponent worsted in argumentation (nigribyānuyoga), terms of threat (bbartsana, VIII. 2.95), mental deliberation (vichāryamāna, VIII.2.97), censuring a lapse in polite conduct (kshiyā), benediction (āśīb), bidding (braisha, VIII.2.104), narration (ākhyāna, VIII. 2.105), friendly persuasion (amantrana, VIII.1.33), haste (parī psā, VIII.1.42), permission (anujñaisbanā, VIII.1.43 as nanu gachchhāmi bhoh 'May I go, Sir'), communicating something in a harsh manner (ayathābhipretākhyāna, III.4.59). etc. We have also the parenthetical use of manye, 'I think'. (I.4.106; VIII.1.46) when denoting derision or sneering in colloquial language, and other similar forms of living speech as khādata-modatā, 'eat and be merry'; aśnīta-pibatā, 'eat and drink'; pachata-bhrijitä, 'cook and fry', etc. An expression like bhinddhi-lavanā, 'Pour the salt', must have been derived from the cries of busy cooks in a kitchen on festive occasions This extraordinary penetration into popular life and language accounts for Panini's extensive linguistic material which made him notice even such minute details as the names of wells on the left and right banks of the river Beas (IV.2.74).

He notes variations of idiom in Sanskrit spoken in the North and the East, and also quotes forms prevailing in the local dialects of the janapadas, e.g. names of towns in the Usinara country and names of Brahmana and Rajanya members of the saiigha organization in the Vähika region (V.3.114).

The term Bhūshā as used by Pāṇini is the language distinguished from the language of the sacred texts, viz. Chhandas and Brahmana literature. Patanjali states the true position when he says that Sanskrit was the standard speech of the Sishtas, i.e. cultured persons, who even without instruction were capable of using the correct speech. He does not deny the co-existence of the speech of the common people called Apabhramsa of which there were variations (ekaikasya šabdasya bahavo' pabhramsāh, L5). Patanjali could speak the language which was the medium of his literary expression, but a common herdsman would use one of the Prakrit dialects. Kātyāyana definitely mentions Loka (ordinary language of the Sishtas) as the standard of grammatical norm, and at the same time refers in a vart, to the existence of Prakrit roots like āṇapayati and others (I.3.1.12; I.269). Sanskrit and Prakrit should not be thought of as exclusive of each other in point of time. 'The matter is really to be viewed not in the light of a contrast between actual spoken language and a Hochsprache. It is rather a matter of class speeches; Yaska spoke Sanskrit much as he wrote it, and the officials of Asoka equally conversed in a speech essentially similar to that in which they wrote, while contemporaneously lower classes of the population spoke in dialects which were far further advanced in phonetic change'. (Keith, H.S.L., p. XXVI).

PĀŅINI'S GENIUS FOR SYNTHESIS—Pāṇini shows a scientific and balanced judgment which could reconcile the opposite views and controversies regarding important topics of grammar and their method of treatment.

Thus the most acute grammatical controversy in his days was that concerning the derivation of nouns from verbs. The Nairuktas and the Śākaṭāyana school held the view that nouns were derived from verbs. On the other hand, Gārgya, who was probably a Nairukta, and the grammarians maintained that it was not necessary to trace each and every noun to a verb (Nāmany-ākbyatajānīti Śākaṭayano nairukta-samayaścha, Yāska, I.12; Bhāshya, II.138, Nāma cha dhātujamāha Nirukte Vyākarane Śakaṭasya cha tokam). Yāska himself subscribed to the theory of verbal derivation of nouns, but he disapproved of the ridiculous attempts made at times by the followers of Śākaṭāyana to invent fanciful derivations of nouns from verbs (Nirukta, I.13): 'The etymologist who indulges in improper and unauthorized derivation of words deserves censure; the scientific principle thereof cannot be faulty'.

Pāṇini's view on the subject represents a synthesis. Kātyāyana and Patañjali state that Pāṇini regarded the Unādi formations as not derived from any root and suffix (avyutpanna prātipadika; Prātipadika-vijnanāchcha Pānineh siddham, VII.1.2.5; III.241, Unadayo' vyutpannani pratipadikani). Words of regular derivation from verbs and suffix form the subject of Panini's Kridanta section. Others which do not admit of such regular analysis and derivation were considered by him to belong to the Unadi class. Panini's attitude towards the Unadi suffixes is one of silent approval. In the sūtra Unādayo bahulam (III.3.1) he takes a passing notice of the Unadi suffixes, but he refrains from discussing in his usual manner the characteristic features. and details of the Unadi system. It appears that the Unadis were the product of the Śākatāyana school. To ascribe them to Pāṇini would militate against the system for which he stands. SOURCE OF MEANING-Kātyāyana acquaints us with two views held about the factors which give to the words their proper meaning. He says that the application of a word to a particular object rests on the root-meaning underlying it, e.g. gan is so called because it moves, but all objects which move do not get the name gan. Yaska uses this argument as the burvapaksha view for rejecting the derivative theory (Nirukta, I.12). The other reason according to Katyayana is the application of a word to an object as seen in popular usage (Darshanam hetuh, I.2.68; I.250). We have seen that Pāṇini recognises both these views when he says that Samijna and Yoga both contribute to the meanings of words in their own way (II.1.53,55),-

JAT1 AND VYAKT1-This controversy centred round the question whether a word denotes a class (Jāti) or an individual (Vyakti). As indicated by Kātvāyana, Vājapyāyana held the view that a word denotes the class, whereas Vyadi took the other view that it stood for the individual (Bhāshya, 1.242; I.244). Patanjali credits Pānini with the reconciling of the two opposite views; e.g. sūlra 1.2.58 is based on the ākriti (class) view, and sūtra I.2.64 on the dravya (individual) view of meaning (Bhāshya, I.6).

ONOMATOPOEIA—Yāska gives two views on the subject: "Onomatopoeia does not exist", says Aupamanyava'. His own view was that the names of birds are very often in imitation of their sounds. Pāṇini has accepted this principle of anukaraṇa, as applied to avyakta speech, i.e. articulation which is not in the form of distinct syllables (avyaktānukaraṇāt, V.4.57).

PREFIXES—Yāska says that Šākatāyana considered the prefixes as mere signs or symbols of meaning (dyotaka), but Gārgya held that they carry a meaning of their own (I.3). Pāṇini sees no conflict between these views. Prefixes like adhi and pari are deemed by him as anarthaka (I.4.93), evidently implying, as Patañjali points out, that there were other prefixes

which were not devoid of meaning.

DHĀTU AS KRIYĀ- AND BHĀVA-DENOTING—The question whether the verbs denote 'becoming' (Kriyā) or 'being' (Bhāva) was an important one for the grammarians on the ground of its bearing on the eternity of words. Patañjali says that Pāṇini accepted both views in sūtra Bhūvādayo dhātavah (I.3.1; I. 258). Taken separately sūtra II.3.14 supports that verbs refer to bhāva and sūtra II.3.15 to kriyā.

philosophy of Grammar. Kātyāyana in his vārt. on IV.4.1 refers to two opposite schools, viz. naityaśabdika and kārya-śabdika (Bbāsbya, II.329). The Rik Prātišākbya refers to the two views regarding the eternity and not-eternity of letters (XIII.14). Yāska quotes the opinion of Audumbarāyaṇa holding that words vanish with their utterance (Indriyanityani vacbanam Audumbarāyaṇaḥ, Nirukta, I.2). Patañjali reveals in his discussion that Pāṇini as well as Kātyāyana were advocates of the eternity of words, but that does not preclude the grammatical operations of lopa and āgama affecting words. Pāṇini defines lopa or elision as adarašana (I.1.60), which Patañjali explains as antaradhāna, i.e. disappearance. On the

contrary, the Tait. Prāt. held that lopa is vināsa or annihilation, (I.57), a view based on the non-eternity of words. Similarly, Pāṇini's ādeśa was previously known as vikāra (Kāt. I.31).

From the above examples it may be inferred that between two extreme views, Pāṇini always preferred to follow the golden mean, or as we might put it, the MAJJHIMA-PAŢIPADĀ, the Middle Path, which was the keynote of the period in which he was born,

## CHAPTER VI RELIGION

## SECTION 1. DEITIES

The religious conditions in Pāṇini mainly relate to yajña or sacrifice, and worship of various Vedic deities with oblations and performance of appropriate rituals by different classes of priests. Names of officiating priests and dakshiṇā or payments for their service are also mentioned (V.1.69; V.1.95). At the same time there are definite indications of popular phases of religious beliefs and practices as elaborated in devotion to gods and asterisms, worship of images and the growth of religious ascetic orders.

DEITIES. Pāṇini mentions the following Vedic deities, both singly and in pairs: (1) Agni (IV.1.37), (2) Indra, (3) Varuṇa, (4) Bhava, (5) Śarva, (6) Rudra, (7) Mṛiḍa (IV. 1.49), (8) Vṛishākapi, (IV.1.37), (9) Pūshā, (10) Aryamā (VI.4.12), (11) Tvashṭā (VI.4.11), (12) Sūrya (III.1.114), and (13) Nāsatya (VI.3.75). The last name is derived by Pāṇini as na asatyāḥ, 'who are the opposite of non-truth'. The Mahābhārata mentions Nāsatya and Dasra as the twin Aśvins born of the nose (nāsā) of Samjñā, wife of Sūrya (Anušāsana-parva, 150.17). The derivation from nāsā is in fact mentioned by Yāska as a probable explanation of the word (nāsikāprabbavan babbūvatur iti vā, VI.13). But Pāṇini accepted the etymology of this word given by Aurṇavābha whose opinion is quoted by Yāska (satyan eva nāsatyāvitty-Anrnavābhab, Nirukta, VI.13).

Indra is also referred to as Marutvān (IV.2.32). Pāṇini refers to Prajāpati under the symbolical name of Ka. Patañ-jali says that Ka is not a pronoun, but the proper name of a deity (sanijāā chaishā tatrabhavataḥ, II.275), so that the dative

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case of Ka would be Kāya, not kasmai. Reference is also made to the deity called Vāstoshpati who presided over a house or homestead and was as old as the Rigveda. Pāṇini's mention of Grihamedha (IV.2.32) under the context 'This is its deity' (IV.2.24) shows that Grihamedha was also looked upon as a deity. In the same context mention is also made of Soma, Vāyu, Mahendra and Apāmnaptri (IV.2.27), which last was a name of Agni as sprung from water to whom special oblations were offered.

Of the pairs of deities (devatā-dvandva, VI.2.141) a long list is found in the Ashṭādhyāyī, e.g. Agni and Varuṇa (VI.3.27), Agni and Soma (IV.2.32; VI.3.27), Dyau and Pṛithivī (IV.2.32; VI.3.29-30) Ushā and Suryā (VI.3.31), the twin agricultural deities Śunāsīra, and other combinations with Rudra and Pūshā (VI.2.142). Even Manthin, a Somavessel (Somagraha) is mentioned in the context of 'twin deities' (VI.2.142).

Of the female deities the older goddesses mentioned are Indrani, Varunani, (IV.1.49), Agnayi, Vrishakapayi (IV. 1.37), Prithivi always referred to as a pair with Dyaus, and Ushas for whom oblations were prepared as for an independent deity (IV.2.31).

POST-VEDIC DEITIES. The most important of these is goddess Pārvatī four of whose names are mentioned, viz. (1) Bhavānī, (2) Śarvānī, (3) Rudrānī and (4) Mriḍānī (IV. 1. 49). This worship was a feature of the Sūtra period. The Vedas refer to their male counterparts such as Bhava, Śarva, Rudra and Mriḍa. The Śatapatha Brāhmaṇa mentions Rudra, Śarva, and Bhava as forms of Agni (VI.1.3. 18), and makes the important statement that the name Śarva was popular in the Prāchya country, and Bhava in the Vāhīka region (Śarva iti yathā Prāchyā āchakshate, Bhava iti yathā Vāhīkāḥ, ŚB., I.7.3.8). It may, therefore, be inferred that the names Śarvānī and Bhavānī were local designations of the one and the same Mother Goddess. Similarly Rudrānī

and Mridani may have been other local epithets of the same deity.

Aditya referred to in sūtra IV.1.85 is to be taken as the name of the classical sun-god rather than of the Vedic Adityas. In fact a new feature of the Pāṇinian pantheon is the emergence of time-denoting words raised to the status of deities (IV. 2.34). For instance, oblation was prepared to worship the deity named Māsa, 'Month', and called Māsika; and similarly for the deity Samvatsara, 'Year', and called Samvatsarika. There was also worship of the 'Seasons' as deities, e.g. Vasanta or Spring, the oblation being called Văsantain bavib. Păņini himself refers to Ritu, 'Season' as a deity (IV.2.31), in whose honour some worship was prescribed. This process of deification extended even to stars. This is indicated by the mention of Proshthapada, a name of Bhadrapada, as a devata or deity (IV.2.35). But the whole system of adopting personal names after the names of asterisms, for which detailed rules are given (IV.3.34, 36, 37), was due to the fact that the stars became objects of adoration and worship. Names like Rohinishena, Bharanishena and Śatabhishaksena implied in the sūtra Nakshatrād-vā (VIII.3.100) point to a belief in the beneficent influence of deities presiding over these asterisms.

pression in the cult of Bhakti or theistic devotion to particular gods and goddesses. Such names as Varunadatta and Aryamadatta, which were shortened as per sūtra V.3.84, point to the belief that gods like Varuna and Aryamā, if propitiated by the parents, would grant the boon of a son to be named after them. Pāṇini admits that the name-ending datta denoted a benediction from a god or a higher power of which the personal name became a symbolic expression (Kārakād-datta-śruta-yorevāšishi, VI.2.148). This religious approach is further exemplified in Pāṇini's reference to bhakti to Vāsudeva and Arjuna (IV.3.98). Patañjali clearly remarks that Vāsudeva was here not a mere Kshatriya name but the personal name of

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Kṛishṇa whose bhakta or worshipper was called Vāsudevaka. We should, however, admit that bhakti in this context (IV.3.95-100) has also a secular significance in some sūtras, e.g. āpūpika, one who loves eating cakes (example to IV.3.96). The reference to the bhakti of Mahārāja or Kubera proves on the other hand that Pāṇini surely had religious bhakti also in mind (Mahārājat-thaā, IV.3.97).

MAHĀRĀJA. Besides referring to the bhakti shown to Mahārāja as stated above, Pāṇini also mentions that Mahārāja was a devatā (IV.2.35), to whom oblations were offered. According to Patañjali bali offered to Mahārāja was called mahārāja-bali (I.388, cf. also Kāśikā, II.1.36). This deity may be identified with those mentioned as a group of Four Great Kings, Chattāro Mahārājāno, who dwell in the Chātummahārājika or the lowest deva world as guardians of the four quarters. In Jātaka VI.265, Vessavaņa is called a Mahārāja and in the Mahāsntasoma Jātaka Śakra and the other three Lokapālas are called Mahārājāno (VI.259). They also stand at the head of the list of gods and other superhuman beings in the Āṭānāṭiya Sutta (Dict. Pāli Proper Names, I.242; 861). From bhakti to Mahārāja deity, it is clear that Vāsudeva as an object of bhakti is also to be taken as a deity as stated by Patañjali.

VĀSUDĒVĀ-CULT. Pāṇini's reference to Vāsudeva as the object of bhakti throws light on the antiquity of the bhakti cult. Kaiyaṭa describes Vāsudeva as paramātma-devatā-vi-iesha. Keith accepts the accuracy of this identification and considers the remark of Patañjali, viz. samijāā chaishā tatra-bhavataḥ, to be 'the most satisfactory proof of the identity of Vāsudeva with Vishņu, for except through such identification no one could dream of putting Vāsudeva on the same plane as Ka' (J.R.A.S., 1908, p. 848). Patañjali's reference to the staging of Bali-bandhana, Vishņu's famous exploit, and the slaying of Kamsa, Krishņa's great deed, were regarded by Weber himself as hinting at the early belief in the existence of Krishņa-Väsudeva and his identification with Vishņu (ib. p.

847). If in the second century B.C. these exploits formed part of the Vishnu legend they must have been considerably older (cf. the example, Jagbana Kanisani kila Vasudevah, Bhāshya quoting it as a past event, II.119). Patañjali also refers to the Vyūba of Krishņa with his three acolytes: Janārdanas-tvātmachaturtha eva, (Bhāshya, III.43, on sūtra VI. 3.5). He also mentions Krishna and Samkarshana as joint leaders of an army (Samkarshana-dvītīyasya balam Krishnasya vardhatām, I.426), and refers to the existence of temples dedicated to Kesava and Rāma besides those of Kubera (Prāsāde Dhanapati-Rāma-Kešavānām, I.436). In sūtra VIII.1. 15 Pānini states that the word dvandva signifies a pair of persons jointly famous (abbivyakti), on which the Kāśikā cites as an example Samkarsbana-Väsudevan (dvävaþyabbivyaktan sābacharyena). Devotional worship to Sankarshana and Vāsudeva in connection with a religious shrine is proved by epigraphic evidence of second century B.C. (Nagari Ins., E.I., XXII, p. 198 ff.). The Arthasastra not only refers to the legend of Krishna and Kamsa (XIV.3) but also prescribes the building of temples sacred to god Apratihata, i.e. Vishnu (II. 4). These examples, although of the Maurya-Sunga epoch, show that Krishna's divinity was already established as a result of centuries of religious development. Patanjali's reference to the Siva-Bhagavata religion (II. 387) is also proof of the early antiquity of the Bhagavata cult, for the Saivas following the Bhakti cult must have been so named after the Bhagavatas. Although the evidence from the Gana-patha is not unassailable, it must be mentioned that the Gavāśva group (II.4.13) reads Bhāgavatī-Bhāgavatani, as a compound word in singular number mentioning a female and a male follower of the Bhagavata religion. Grierson also maintained the antiquity of the Bhagavata religion in Panini's time on the basis of his knowledge of Vasudeva as a deity (I.R.A.S., 1909, p. 1122). Sir R. G. Bhandarkar agrees with this view. (I.R.A.S., 1910, p. 170, Vāsudeva of Pānini, IV.3.98).

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IMAGES.—Figurines, including divine images are included under the general term pratikriti (V.3.96). Pāṇini, however, knew of a more specific word, archā (V.2.101), which accords with Patañjali's usage (Mauryaih biraṇyārthibhih archāḥ prakalpitāḥ, V.3.99, Bhāshya, II.429). Its derivative archāvān (V.2.101) should have signified the owner of an image.

An important sūtra, Jīvikārthe chāpanye (V.3.99) intended to regulate the formation of names of divine images, proves beyond doubt Pāṇini's knowledge of images of deities in his time. Regarding the naming of images there are the following possibilities covered by Pāṇini's rule and Patañjali's rather involved argument on it:

- (1) There may be images installed in temples or open shrines, which are not of individual ownership, and hence not for any ones' livelihood (jīvikā), or for sale (paŋya), but are for worship (pūjārtha). These images remain outside the purview of Pāṇini's rule. How they were named, whether Śiva or Śivaka we are left to guess, but there is all the probability that they were named without the kan suffix, as Śiva, Skanda, etc.
- (2) In the second place there may be images in the possession of devalakas or owners and custodians of shrines. They may be either fixed in one place or carried from place to place. The former would cover for all practical purposes the images of class I above, which would then be objects of Pāṇini's rule and the deity would be named Śiva (without kan suffix). Both chala and achala images with the devalakas would serve for worship (pūjartha), be a source of livelihood (jīvikārtha) to their care-takers, but be not for sale (apanya). All these are the object of Pāṇini's rule, and they would be named as Śiva, Skanda (without ka).

<sup>&</sup>lt;sup>1</sup> Archā means 'image of a god'; cf. dīrghā-nāsikī archā, tungā-nāsikī archā (IV.1.54; II.222); also Lūder's discussion of its use in the Mora Well Inscription, Ep. Ind., XXIV. p. 198.

- (3) The third class of images would be those displayed for sale (panya); these were not for worship (pūjārtha), although they were a means of livelihood to their owners (jīvī-kārtha). These would be counter-examples of Pāṇini's sūtra, and named as Śivaka, Skandaka, etc.
- (4) Here Patanjali joins issue with Pānini. On the basis of some reliable historical information which he had he contends as to how the sūtra will fare in the case of images which the Mauryan kings, 'greedy of gold' (biranyārthibhih), had ordered to be set up (prakalpitāh) and most probably also to be sold, and which thus served simultaneously the triple purpose of jīvikā, panya and pūjā.1 Kautilya supplies the much needed commentary on this extraodinary Mauryan measure to replenish their exchequer.2 The Devatādhyaksha is directed to raise money (ājīvet, biranyopahārena, kośam kuryāt, Arth. V.2) by manipulating the worship of divine images and exploiting the credulousness of the people, such as organising fairs and festivals in the holy shrines of deities (daivatachaitya), improvising shows of miraculous naga images with changing number of hoods, and spreading the news of other miracles, etc. (Arth, V.2). According to Patanjali these particular images would not be covered by Panini's rule (bhavet tāsu na syāt), and although they might have found a place in the shrines for worship, they would not get the name Siva, Skanda, etc.
- (5) As a way out of the conundrum, Patañjali dismisses the case of the Mauryan images which were both for sale and for worship, and he points to contemporary images under actual worship (yās-tvetāh samprati pūjārthāh tāsu bhavish-

<sup>े</sup> अपण्य इत्युच्यते तत्रेदं न सिघ्यति । झिव : स्कन्द : विशासः इति । कि कारणं । मौर्थेहिरण्यार्थिभिरची : प्रकल्पिता : । भवेतासु न स्यान् । सास्त्वेता : संप्रति पूजार्थाः स्तासु भविष्यति । (Bhibbya, V.J.99; II.429).

<sup>&</sup>lt;sup>2</sup> Hiranyarthi, according to Patanjali on var. arthaebchäsannihite on sätra V.2.135, denoted one who was bereft of wealth or gold, and consequently longed for it.

yali) which were suitable examples of Pāṇini's rule and be designated as Śiva, Skanda, etc. (without kan suffix).1

Images of Śiva and Vaiśravana were also known to Kautilya (II.4) as being installed in temples. Some of these deities were worshipped in pairs, e.g. Śiva-Vaiśravanau, Skanda-Viśākhau, Brahma-Prajāpatī (Gana-patha to II.4.14, and also a vārttika on VI.3.26). As pointed out by Patanjali these joint names were post-Vedic (na chaite Vede sahanirvā pa-nirdishtāh, VI.3.26; III.149). Siva and Vaisravana were the two main deities associated in the development of the popular cult of the Yakshas, Nāgas and other godlings. We have seen that Pānini refers to the worship of Mahārāja, which was but another name of Vessavana-Kubera, who headed the group of the Four Great Kings or Regents of the Four Quarters and was the king of the Yakkhas in the North. Pāṇini also mentions the descendants of Dhritarajan (VI.4.135) who may be identified as the Lokapāla Dhatarattha ruling in the East at the head of the Gandhabhas

DEMONS—The counterpart of the gods were the demons who are dreaded as much as the former were loved. In mentioning them Pāṇini is obviously drawing on older literature rather than recording contemporary beliefs. Diti (IV.1.85)

Images	Jivikā	Panya or not	For pājā or not	name
1. Images instal- led in shrines	no जीविका	अपण्य	पूजार्यं	outside Pāṇini's rule; or see above (2)
2. Devalaka ima- ges	जीविकार्य	भ्रपण्य	पूजार्थ	शिव : स्कन्दः
3. Images for sale	जीविकार्घ	पण्य	notपूजार्थ	शिवकः स्कन्दकः
4 Images under the Mauryas	हिरण्यार्थ	पण्य	पूजार्थ	could not be named as शिव : स्कन्द : (भवेतामु
5. Images in Pat- anjali's time	जीविकार्थ	अयण्य	पूजार्थ	न स्वात्) शिवः स्कन्दः (यास्त्वेताः संप्रति पूजार्थस्तासु भविष्यति ।)

mother of the Daityas, Kadrū (IV.1.72), Asuras (IV.4.123), Rākshasas and the Yātus (IV.4.121) are referred to, but in connection with older linguistic forms. The term āsurī māyā (IV.4.123) similarly appears to be an old word signifying thaumaturgy or the asura-vidyā (cf. Āśv. Śr., X.7, and ŚB., XIII.4.3.11). The female demon Kusitāyī, wife of Kusita (IV.1.37) occurs in the Maitrāyaṇī Sambitā (III.2.6). The planet Rāhu is referred to as an enemy of the moon (Vidbum-tuda, III.2.35).

YAKSHAS—In sūtra V.3.84 Pāṇini refers to Sevala, Supari, Višāla, Varuṇa and Aryamā. These were names of tutelary deities. It has been shown above (ante, p. 188) that Višāla was the name of a Yaksha according to the Sabhāparva, 10.16. Supari and Śevala also appear to be minor godlings, probably Yokshas. According to the Āṭanāṭiya Sutta (Dīghanikāya) Varuṇa was a Yaksha also. Aryamā, too, was most probably a minor deity of popular religion associated with child-birth.

## CH. VI, SECTION 2. YAJNAS

THE YĀJNIKAS—Yāska quotes the opinions of the Yājnikas along with those of the Nairuktas. Pāṇini also refers to the āmnāya or tradition of the Yājnikas whose school was called Yājnikya (IV.3.129). The Yājnika literature was of remote antiquity. Patanjali refers to difficult Yājnika texts, e.g. stbūla-prishatīm anadvābīm, which could not be rightly explained without the aid of grammar (I.1). He also mentions their treatises (Yājnīka-šāstra, I.9). It appears from the Ashtādhyāyī that the Yajna doctrine both in its theory and practice held full sway in his time. He records minute details regarding the peculiarities of pronunciation of such formulas as the Subrahmaṇyā (I.2.37), Nyūnkha (I.2.34) and Yājyā verses (VIII.2.90). His references relate not merely to academic discussions, but to actual practices of the Yajna ritual (yajna-karmani, I.2.34; VIII.2.88).

YĀJNIKA LITERATURE—Besides the Brāhmaņas and the Anubrāhmaņas (IV.2.62), a vast body of specialised yājnika literature in the form of explanatory texts (vyākhyāna) of the kratus or Soma sacrifices and other yajnās had come into existence (IV.3.68); for example, the treatise giving an exposition of Agnishtoma was called Āgnishtomika; similarly there were texts called Vājapeyika and Rājasnyika. Particularly interesting is Pāṇini's reference to two-fold texts, one called Purodāšika, 'a book on purodāša', containing detailed instructions about the manner of preparing the sacrificial rice-cake, and another called Paurodāšika (IV.3.70) which was a commentary of the mantras recited at preparing the purodāša cake. These mantras

<sup>&</sup>lt;sup>1</sup> The Parodáša verses in the Yajnrveda, Adhy. I, deal with the following stages, vribin nirvapati (verse 9), proksbati (12), avabanti (14), parāpunāti (16), tandnlān pinasbti (20), praņītābhih samyanti (21), and kapāleshu irapayati (22),

occur in the Yajurveda, Adh. I, and their commentary is found in the Śałapatha, Book I, which is thus a Paurodāsika text. These special handbooks arose to meet the practical needs of priests at the Yajūas.

YAJAMANA (SACRIFICER) - The sacrificer was called Yajamāna (III.2.128) for the period of the sacrifice, after which he was on that basis called Yajvā (III.2.103). There were also other terms derived from the performance of special sacrifices, as Agnishtoma-yājī (III.2.85). A person devoted (tach-chhīla) to the constant performance of yajñas was called yāyajūka (III.2.166; ijyā-śīlo yāyajūkah, Amara). For the period of the sacrifice, the yajamana observed the vow of restraining himself from wordy speech, hence called vāchamyama (Vāchi yamo vrate, III.2.40), and of sleeping on a raised platform on the vedi, hence called sthandila (IV.2.15) or sthandila-sayi (III.2.80). The son or the student of the yajamana when he came to be of age as competent to perform the sacrificial act was called alamkarmīna, sitting by his side and assisting him (Yadyasya putro vantevasī vālam-karmīnah syātsa dakshinata āsīno juhuyād iti, Baud Śr., XXII.20). Karma in this sūtra meant Yajna (cf. Yajur., I.1; Satapatha, I.1.21, yajño vai karma).

ĀSPADA—Social status (*bratishthā*) amongst the Brāhmaņas was termed *āspada* (*Āspadam þratishthāyām*, VI.1.146), a term still current. The *āspadas* were derived from the various sacrificial performances, such as Vājapeyī, Agnihotrī, etc. An Āhitāgni (II.2.37) was one who had consecrated the Three Śrauta Fires. One who had ceremoniously lived in the place set apart for the Āvasatha Fire, was called *Āvasathika* (IV.4.74), a word still seen in modern Avasthī. Inside the yajāa-bhūmi, the special place built for the yajāmāna is called *āvasatha* (also agni-śarana, because of the *āvasathya agni* consecrated there), and it was obligatory for him to stay in the *āvasatha* room for the duration of the sacrifice.

NAMES OF YAJÑAS-(Yajñākbyā, V.1.95). Yajña is derived from yaj, 'to worship' (III.3.90). Ijyā is another term used by Pāṇini (III.3.98). Amongst the four Vedas the Yajurveda deals with sacrifices which are of three kinds, Ishti, Pasubandha and Soma. Pāṇini makes a general reference to all the Kratus or Soma sacrifices mentioned in the Adbvaryuveda which was but another name of Yajurveda (Adhvaryukratur-anapumsakam, II.4.4). A distinction is made between Kratus and Yajñas, as both are mentioned separately in sūlra IV.3.68. Yajāa was a general term which included the Ishtis like Darsa and Paurnamāsā, Yajnas as Pākayajna, Navayajna, and such variations as Pañchaudana, Saptaudana, etc., as well as such well known Kratus as Agnishtoma, Rājasūya, and Vājapeya. But Kratu was used specially for the Soma sacrifices (II.4.4, Kāsikā, kratusabdah soma-yajñeshu rūdhah). The Soma juice forms the oblation in the Kratus. The Kratus are further subdivided into those called Ahina" which are Soma yagas lasting from one to eleven days, and Sattra which continued from twelve days to a hundred or a thousand years, the Dvādaśāha being regarded as both an ahina and a sattra. There are Kratus governed by fixed time durations as ekāha, dašāha, etc. (subject to kālādhikāra, V.1.95). Agnishtoma, Vājapeya, Rājasūya were kratus, but not sattras.3 Names of the sessions of Soma sacrifices continuing for prescribed periods, were compounded with the names of Yajamānas, e.g. Garga-trirātra, i.e. a Soma session of the Garga family lasting for three days; similarly Charaka-

In the Ishti as Daria and Pauroamasa, the oblation is thrown with Svaba, in the other two with Vaushal (उपविष्ट होनाः स्वाहाकारप्रदानाः बहोतयः; तिष्ठक्कोमा वयट्कारपदानाः बाज्यापुरोनुवाक्यावन्तो यजनयः।)

<sup>&</sup>lt;sup>2</sup> Sūtra V.4.145, and vārt. on IV.2.42 ahnah khah kratau, ahnām samūhah kratuh ahinah.

<sup>&</sup>lt;sup>8</sup> Agnishţoma and Văjapeya, each lasts for one day only with a preliminary course (pūrvānga) of four days, and the Rājasūya for about four days.

trirātra, Kusurabindu-saptarātra, etc. (Dvigau kratau, VI.2.97).

Of special sacrifices, Păṇini mentions Agnishtoma (VIII. 3.82), Jyotishtoma and Ayushtoma (VIII.3.83), the latter performed to obtain longevity, and making with the former a part of the Abhiplava ceremony. The Agnishtoma with its three pressings (savanas) and twelve stotras forms the norm (prakriti) and the Vajapeya and the Jyotishtoma are its modifieations (vikriti). Rājasūya (III.1.114), a vikriti of the Agnishtoma, and Turayana (V.1.72) are also mentioned. Turayana was a modification of the Paurnamasa, and the Yajamāna performing it was called Taurāyanika (V.1.722). The Śānkbāyana Br. speaks of Turāyana as a yajna performed for the attainment of heaven (sa esha svargakāmasya yajñah, IV.11, cf. Aranyakaparva, 13.21). According to the Kat. Sr. (XXIV. 7.1-8) this sattra commenced on the fifth day of Vaisākha Śukła or Chaitra Śukła and lasted for one year (samvatsaram yajate). It was regarded as a vikriti of Dyadashaha sattra. Kundapāyya and Sanchāyya were the names of special Soma kratus (III.1.130), the former being a vikriti of Dvādashāha and a sattra lasting for one year, which was originally performed by the Kundapāyin Rishis (cf. Rig., VIII.17.13, where a person is so named).

Reference is also made to Dīrghasattra or sacrifices extending over long periods of time, as a hundred or a thousand years (VII.3.1). No doubt the Brāhmaṇa texts describe such yajñas, e.g. Viśvasṛij, a yajña lasting for one thousand years (sahasrasama sattra) described in the Panchavinisa Brāhmaṇa, but we have the testimony of Patañjali saying that such long sacrifices were not actually performed (loke aḥrayuktāḥ), and that only the Yājñikas described them in their works as part of inherited tradition (kevalam rishi-sampradāyo dharma iti kṛitvā Yājñikāḥ sāstreṇānuvidadhate, Bhāshya, 1.9, and vār. Aḥrayukte dīrghasattravat).

SOMA-Pressing of Soma was known as sutyā (III.3.99), and

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one who pressed it as Somasni (III.2.90). After the ceremony the yajamāna who pressed the Soma was called suivā (III.2.103), corresponding to the other title yajvā, 'one performing a sacrifice'.

The drinking of Soma depended on the fulfilment of certain spiritual and material conditions. According to Pāṇini he who had the requisite qualification to drink Soma was called somya (Somam arbati yah, IV.4.137). In the opinion of the Yājñika school as quoted by Patañjali, that person was entitled to drink Soma in whose family there was no social stigma in the ten preceding generations (Evain bi Yājnikāh pathanti, Daśapurushanûkam yasya grihe śūdrā na vidyeran sa Somam pibediti, Bhāshya, IV.1.93; II.248). Manu looks at the problem from an economic point of view: 'He who owns food to last for three years or more so as to maintain his dependants, is entitled to drink Soma (sa somam pātum arhati, Manu, XI.7; also Kāśikā, VII.3.16). 'He should lay by the minimum prescribed store lest his labour be wasted' (XI.8). In the Soma ceremony the priests (yājakas) might press the Soma plant, but the credit of performing the Soma yajña belonged to the actual yajamāna who was in reality the beneficiary (pradhāna kartā) of that sacrifice. A special expression was current to designate him as sunvan (Suño yajña-samyoge, III.2.132). On the other hand in a sattra, i.e. a Soma yaga lasting for more than twelve days, the number of priests ranges from 17 to 25 (saptadaśāvarāh pañchavimsatiparamāh), all of them enjoy the status of yajamānas (sarve yajamānāh, sarve ritvijah), all are abitagnis, all sharing the fruits of the yajña equally, and since it is a corporate endeavour no one pays or expects any fee, and all of them perform the act of pressing the Soma juice. This arrangement is reflected in the phrase sarve sunvantah sarve yajamānāh sattrinah uchyante (Kāsikā on III.2.132, Suño yajña-samyoge).

NAMES OF FIRES (AGNYĀKHYĀ, III.2.92) - Agni as an agent carrying the offering of the sacrificer to the gods is

spoken of as havyavāhana (III.2.66), and to the manes as kavyavāhana (III.2.65). In these two capacities it receives the offerings with the formula Svāhā and Svadhā, respectively (II.3.16). The former was called Chitya agni (III.1.132) used for performing the Śrauta sacrifices. Of the Three Śrauta Fires (śrautāgnayaḥ), mention is made of Gārhapatya (IV.4.90), and of the Dakshināgni under the special name of Ānāyya which was brought from the Household Fire and not retained (Ānāyyo' nitye, III.1.127; with Bhāshya II.89).

The word ānāyya is of uncommon interest. The Śrautāgni is kindled with araṇi and perpetually maintained by an ābitāgni as Gārhpatya agni in the vedi of that name. The other two altars are Āhavanīya and Dakshiṇāgni. The intending sacrificer takes the agni from his Gārhpatya altar to the other two. In that case both are called ānāyya temporarily, since after the oblations are over the fires in the Ahavanīya and Dakshināgni lose their sacred character. But besides the Gārhapatya Fire there were other recognised sources for feeding the Dakshiṇāgni; for example, as a temporary measure the Dakshiṇāgni could be borrowed from a frying-place (bhrāshtra), a Vaisya-kula, or from a new home where the proper śrautāgni had not yet been installed. In such a contingency the word ānāyya denoted only the Dakshiṇāgni. (ān-āyyo Dakshiṇāgnih; rūḍhìreshā, Kāsikā).

The three stages in the kindling of the Fire are appropriately referred to as parichāyya, its showy assemblage and adornment in the beginning (alankarana; cf. parichāyyam chinvīta grāmakāmah, Sat. Br. V.4.11.3); upachāyya, its augmenting or blazing forth (samvardhana) in the middle; and samūhya (III.1.132), its final form consisting of ashes and rubbish swept or heaped together, for which the graphic phrase samuhya-purīsha was current (Ś. Br. VI.7.2.8; Kāt. Sr. XVI.5.9.10).

Special kinds of *vedis* which were made twice or thrice the usual size, were known as *dvistāvā*, *tristāvā* (V.4.84). The normal size of the platform in the Darśa-Paurnamāsa was

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27 ft. ×131/2 ft. (36 vitastis long and 18 broad). On this platform different fire-altars were built, each being called a sthandila (IV.2.15; same as kunda in smārta yajñas). These altars were made of different shapes referred to in the sūtṛa Karmany-agnyākhyāyām (III.2.92), e.g. šyena-chit, kainkachit (Kāšikā), drona-chit (square), ratha-chakra-chit (round), praüga-chit (triangular), ubhayatah praüga-chit (double triangle; Kāt. Śrauta, XVI.5.9). These were special agnis, the arranging of which was called agni-chityā (III1.132). The altars were piled up (chityā, III.132) with bricks, which were given special names after the particular mantras used for building them (Tedvānāsām upadhāno mantra itishṭakāsu luk cha matoh, IV.4.125). Important words occurring in the mantras used for laying the bricks were selected as their names, e.g. Varchasyā, Tejasyā, Payasyā and Retasyā, ancient words for particular bricks. Pāṇini mentions in particular the bricks called Aśvini (IV.4.126). One who consecrated these sacrificial Fires was known as agni-chit (III.2.91).

OTHER ACCESSORIES—Yajña required a number of accessory articles of which some are mentioned in the Ashṭādhyā-yī. That place in the yajña was called saṁstāva (III.3.31) where the Chhandoga singers sang the hymns in the Soma Kratus, a sort of stuti-bhūmi (Amara). Another portion was the avaskara for throwing refuse (IV.3.28), also called nt-kara. The kuśa grass, necessary for sacrificial ceremonies, is referred to as pavitra which had become a saṁjñā word (Pu-vaḥ saṁjñāyām, III.2.185; cf. Yaju. I. 2, 3, 12). The Soma plant was required for Soma sacrifices. Patañjali mentions pūtīka grass as a substitute for Soma, but observes that Soma had not become obsolete (na cha tatra somo bhūtapūrvo bhavati, I.1.56, I.137).

The sacrificial utensils (yajña-pātra, I.3.64), specially the cups for drinking Soma, were arranged in pairs which is given as one of the meanings of the word dvandva (yajña-pātra-prayoga, VIII.1.15). Two Soma-cups (grahas) are named,

kshullaka-vaiśvadeva (cf. Kāt. Śr. IX.4.1) and mahā-vaiśvadeva (Kshullakaścha Vaiśhvadeve, VI.2.39, cf. Kat. Śr. X.6.2. for mahāvaiśvadeva). Oblation is mentioned as havi, a special form of which was known as sāmnāyya (III.1.129), which is said to consist of 'curd from the cow's milking of the previous evening (sāyamdoha) taken with fresh milk of the following morning (prātardoha) and offered together to Indra in the New Moon sacrifice (sam+nī, to mix).

PRIESTS.-The generic term ritivij (III.2.59) was applied to all classes of priests employed at a sacrifice. The priests must have been Brāhmaņas as in the Vedic period (Vedic Index, I.112). This is suggested by the epithet artvijina (V.1.71) denoting a person qualified in priestly duties (ritvik-karmārbati, Kātyāyana) which according to Patañjali was applied to a member of a Brāhmaṇa family. The Shadvinisa Br. explains artvijina as one who is able to expound those Vedic texts which are used in yajñas (esba ārtvijīno ya etam vedam anubrūte, I.3.16). According to Patanjali an ārtvijīna should be able to utter the Vedic speech according to its proper pada, svara and akshara (Bhāshya, I.3). A priest with reference to his duties on behalf of the yajamāna was called yājaka; sūtra II.2.9. implies that the word yājaka was compounded with another denoting the sacrificer, e.g. Brāhmana-yājaka, Kshatriyavājaka,

Selection of priests must have depended on their special knowledge of the ritual for which they were invited. Pāṇini refers to the emergence of experts who made a special study of the complicated ritual of Soma-kratus like Agnishṭoma and Vājapeya, and were named Āgnishṭomika, Vājapeyika after

There are three oblations in the Darsa sacrifice, the first is the sacrificial cake for Agni (agneya purodāia), the second curds for Indra (aindrain dadhi), and the third milk for Indra (aindrain payah). The last two make up the sāmnāyya yaga in which the deity is single but the oblations to him being different are added and offered together. Firstly curd is taken in the juhā and then milk is poured on it.

those rituals (Kratūkthādisūtrāntāṭ-ṭhak, IV.2.60). For such important sacrifices the invitations would naturally be issued to them. Along with their pupils these masters cultivated advanced studies of those specialized Kratu texts (kratu vishešavāchibhyash-ṭhak pratyayo bhavati taḍadhīte tad-vedetyasmin vishaye, Kāšikā).

In the ritual as given in the Brābmaņas, the number of priests is sixteen, classed in four groups (Vedic Index, I.113). Of those connected with the Rigveda, Pāṇini mentions Hotā, Praśāstā (VI.4.11), and Grāvastut (III.2.177), the Praśāstā known as Maitrāvaruṇa also. The Grāvastut praised the grāvā or stones for pressing Soma. The Hotā recited the yājyā and anuvākyā verses.

Of the Sāmveda priests, Pāṇini refers to Udgatā in sūtra V.1.129, and to his assistant Pratihartā in its gana.

The duties of the various priests were indicated by the addition of suffixes to their names, those of the Udgātā being called andgātra (V.1.129) and of the Adhvaryu, ādhvaryava (IV.3.123). Adhvaryu's assistant Neshṭā (VI.4.11) belonged to the Soma ritual whose duty it was to lead forward the wife of the sacrificer. The importance of the Adhvaryu increased with the growth of the complicated ritual in which differences of opinion also arose in course of time. It appears that the followers of each special recension of the Yajurveda adopted the ritualistic peculiarities of their own School. The insistence on the two-fold variations of ritual according to locality and śākhā (āmnāya) resulted in the growth of special Adhvaryus who were designated by particular names. This is reflected in sūtra VI.2.10, Adbyaryu-kasbāyayor-jātau, e.g. Prāchyadhvaryu, priests belonging to east India who were affiliated to the Śukla Yajurveda. The followers of the special schools

होता, मैत्रावरुण, अच्छावाक, ग्रावस्तुत् ।
 उद्गाता, प्रस्तोता, प्रतिहर्ता, सुबह्मण्य ।

प्रध्वयुं, प्रतिष्ठाता, नेष्टा, उ सता ।

<sup>4.</sup> ब्रह्मा, ब्राह्मणाच्छंसी, आग्नीघ्र, पोता ।

of the Krishna Yajurveda were distinguished by the names of their śākbās, as Kathādhvaryu, Kalāpādhvaryu, etc.

Of Atharvaveda priests, Pāṇini mentions Brahmā (V.1. 136), Agnīdh (VIII.2.92) and Potā (VI.4.11). Brahmā must have emerged as the general supervisor of the ritual, as is indicated by his duties (karma) designated by the special term Brahmatva (V.2.136). The epithet Mahā-Brahmā 'Chief of the Brāhmaṇas (V.4.105, in which Brahman=Brāhmaṇa) seems to have been derived from the priviledged position of the Brahman priest, who as early as the Rigveda (I. 162.5) was called suvipra, a sage or priest of profound knowledge acting as superintendent of the whole ceremony.

The sons of ritvijs have been specially noticed as Ritvikputra and Hotuh-putra (VI.2.133). These names were derived from sons who followed the calling of their fathers.

RECITATION OF MANTRAS—Yajña implies the invoking of deities with recitation of mantras (mantrakarana I.3.25). Recitation in concert (sahochchāraṇa) marked by clear tone and accent was called samuchchāraṇa (I.3.48). Invocation of deities was nihava and abbihava (III.3.72).

YĀJYĀ VERSES—Pāṇini refers to the technical details of repeating the Yājyā mantras in a sacrifice (Yajña-karmaṇi, VIII. 2.88-92). The Yājyās were all selected hymns from the Rigveda and enumerated in the Hautra-kāṇḍa of the Āśvalayāna and other Śrautasūtras. The Hotā priest recites the Yājyā and Puronuvākyā verses as often as the Adhvaryu commences a set of oblations. The latter priest does not recite any mantra; he only gives directions (praisha) to the Hotā whose privilege it is to recite the appropriate mantra ending with the formula Vaushat, on hearing which the Adhvaryu throws the oblation into the fire.

This complicated ceremony is arranged as follows:

(1) Puronuvākyā and Anubrūbi. It is the first praisha or direction that the Adhvaryu gives to the Hotā to recite the preliminary laudatory verses called Puronuvākyā in praise of the deity who is to be invoked. According to sūtra VIII.2. 91 the formula must be uttered with a pluta accent, as अन्तयेऽ नमुनेहि ।

- (2) In response to this praisha the Hotā recites the Puronu-vākyā verse, the last letter of which is followed by a praṇava pronounced with pluta accent (VIII.2.89), e.g. अपारेतांचि जिन्ततो ३म्। According to the Satapatha, Puronuvākyā is used for invoking the deity and the Yājyā for giving the oblation (bvayati vā anuvākyayā, prayachchhati yājyayā, I.7.2.17). After the Hotā has repeated the puronuvakyā verse, the actual yājyā is recited (atha yadanuvākyām anūchya yājyayā yajati, Satapatha, XI.4.1.12). Both form one pair. In some cases, as pointed out by the Śatapatha, the puronuvākyā was dropped (atha yad-apunarvākyakā bhavanti, XI.4.1.12), and therefore its praisha (anubrūhi) was not counted in the set of five directive formulas comprising 17 letters.¹
- (3) Āśravaṇa. The Adhvaryu, Agnīdh and Hotā priests having taken their seats round the Vedi, the Adhvaryu calls upon the Agnīdh (cf. Agnimindha of Rigveda I.162.5), an assistant of Brahmā, whose duty it was to guard the sacrifice against the Asuras. He sat near the utkara and held a wooden sword (sphya) in hand. The order to him (agnīt-preshaṇa, also called āśravaṇa) consisted of the formula आइ आइव्य with its variant in some śākhās as ओ इ आ इ व्य (Agnīt-preshaṇe parasya cha, VIII.2.92). This praisha signified 'Please notify the sacrifice to the gods, as all is well'.
- (4) Pratyāšravaņa. To this the Agnīdh responded by a pratyāšravaņa formula, अस्तु श्रोद्य pronounced with pluta accent (sūtra VIII.2.91), the meaning being 'Let the gods be notified; everything is O.K.' (cf. Āśv. Śr. I.4, astu śrausbad ity-aukāram plāvayan).

<sup>1</sup> The following verse interpolated in the Bhīshmastavarāja of the Sāntiparva refers to the Yājyā verses:

चतुर्भिदन चतुर्भिदन द्वाभ्यापंत्रभिदेवन । हूयते च पुनद्वभ्यां तस्मै होमात्मने नमः ॥ (Verse added after 47.27 in the Critical edition)

- (5) Yājyā-praisha. Thus getting a line-clear from the Agnīdh, the Adhvaryu turns to the Hotā with the directive 'Yaja', on hearing which the Hotā begins to recite the Yājyā. There is no pluta in the Yaja formula, which is uttered in monotone (ekaŝruti).
- (6) Āgūrta formula (also called abhigūrta, cf. Rig. I.162. 6; Haug, Aitareya Br., Intr., XVIII) consists of the words में ३ पजामहे 'We who are assembled here all give our approving help to promote the yajña' (Ye yajñakarmaṇi, VIII.2.88) which always precedes the Yājyā verse.
- (7) Isbļa or Yājyā. As said above select verses from the Rigveda for invoking particular deities are called Yājyā, which constitute the actual mantras for throwing the oblation. Their last syllable is pluta (Yājyāntaḥ, VIII.2.90). The Yājyā is preceded by Ye yajāmahe and followed by the formula Vanshaṭ, e.g. ॐ ये यजामहे समिय: समियोजन जाज्यस्य व्यन्तु ३ वी १ यह ।
- (8) Vashaṭkāra—As seen above, it was added after each Yājyā verse and pronounced by the Hotā as pluta and in a very loud voice (Uchchaistarām vā vashaṭkāraḥ, 1.2.35; cf. Ait. Br. III.1.7, śanaistarām asya richam uktvochchaistarām vashaṭ kuryāt; i.e. the yājyā verse to be repeated with a very low and the vashaṭkāra with a very loud voice). As soon as Vaushaṭ is uttered the Adhvaryu throws the oblation into the fire. Vashaṭ (I.2.35; II.3.16) and Vaushaṭ (VHI.2.91) were variants of one and the same word, just as आउड़ावय and ओड़श्रावय were variants in the different Śākbās.
- (9) Vitam and (10) Anuvashatkāra (1.2.35; VIII.2.91). In the Soma yāga after the yājyā verse and vashatkāra, another formula is repeated, e.g. मोमस्याने बीही ३ वी ३ पट 'O Agni, taste the Soma!'. According to the Aitareya (III. 1.5) in this way the deities are satisfied by a repeated request

आश्रावयेति चतुरक्षरम्, अस्तु श्रीषडिति चतुरक्षरम्, यजेति इचक्षरम्, ये यजामह इति पंचाक्षरमः, इचक्षरो वषटकारः । एष वै सप्तदशः प्रजापतिः यज्ञमन्त्रायतः

(Tait. Br., Kanda II).

to them to drink the remaining Soma juice. The Vihi formula is called vitam and the vashat added to it anuvashatkāra (Haug, Ait. Br., p. XVIII).

ĀVĀHANA—In the Darśa-Paurņamāsa Ishtis, there are five oblations (Pañcha-prayājas)¹ which constitute the first part (pūrvānga) of the sacrifice (Prayājānuyājau Yajñānge, VII.3. 62) and three secondary oblations called anuyājas.² In a Pašu-yāga their number is raised to eleven. Of the five prayājas,¹ the last one is svahākāra oblation, when the deity is invoked by the formula āvaha, for which Pāṇini prescribes pluta accent, e.g. अनिमा३ वह (VIII.2.91).

MONOTONE (EKAŚRUTI)—The strict rule of reciting Vedic mantras with correct three-fold accent (traisvarya) was gradually being relaxed. Pāṇini, like the Kātyāyana Śrauta-sūtra (I.8.16-19), was making a note of the tendencies current in his time when he says that the mantras were recited with monotone (ekaśruti; ekatāra in Kāt. Sr., I.8.18) in the yajñas, excepting the few cases of Japa, Sāman songs and the special Nyūnkha accents (Yajñakarmanyajapa-nyūnkha-

<sup>1</sup> Five prayajas, viz. समिधो यजति, तन्नपातं यजित, बहियंजति, इहो यजित स्वाहाकारं यजित (Satapatha, I.5.3.1-13, comparing them with 5 seasons). On account of the five oblations or ājyāhutis, accompanied by their appropriate invocations the Yajūa is referred to in the Sāntiparva as daiārdha-bavirākritim, 'whose form is made whole by five havis (47.27).

<sup>2</sup> Trayo'nuyājāi-chatvāro patnī-samyājāh, Šat. Br. XI.4.1.11. The Kāšikā seems to be mistaken in stating that there were 5 anuyājas and 8 patnī-samyājas. In the Pašubandha sacrifices the number of prayājas and anuyājās is eleven each. The 4 patnī-samyājas were offered by the Yajamāna's wife after the anuyājas in the Darša-Paurņamāsa Ishţi. The 8 patnī-samyājas are, however, prescribed, as an option, by the Banāh, \$\$r., 24.29.

The Japa mantra is Yajurveda, II.10. Mayidamindra indriyam, etc., uttered by the Yajamāna with three-fold accents (Kāt. Śr. III.4.18).

Nyūnkha is a recitation by the Hotā at the morning libation of a Soma yūga, comprised of 16 okāras, c.g.

बापी ३ ओओओओओओ ओ ३ ओओओओओओ ओ ३ ओओओ रेवती: क्षयथाहिवस्व: कर्तुचभद्रै विश्वामृतंच। रायो ३ ओओ कोओ को को को ओ ओओओ ओओ sāmasu, I.2.34). Jaimini made a vigorous attempt to restore the old practice of reciting Vedic mantras with their threefold accent whether for study or for ritual purposes (Mīmāmsā, XII.3.20-24; D. V. Garge, Jaimini, Sabara and the Science of Grammar, A.B.O.R.I., XXX,254-5). But it seems to have been a losing battle against heavy odds. The Tait. Pr. also records the practice of monotone (sarvam ekamayam, T. Pr. XV.9).

SUBRAHMANYĀ—The Subrahmanyā formula also had its definite rules of accentuation (1.2.37-38). It was a loud invocation addressed to Indra in the Jyotishṭoma and other Soma sacrifices (cf. Kullūka on Manu, FX.126; Kāt. Śr. IX.1.12; Haug, Ait. Br., p. 260)<sup>1</sup>.

Upayaj was the special name (III.2.73) of the eleven short formulas (samudram gachchha svāhā, etc.) given in the Yajurveda VI.21. Reference is made to the sāmidhenīs, the eleven verses of the Rigveda, III.27.1-11, used for enkindling the fire. The first and the last are each repeated thrice and thus we make fifteen sāmidhenīs for the Darša-Paurnamāsa Ishtis. Of these Rig. III.27.4 is called sāmidhyamānavatī and III.27.11 samīddhvatī by the words samidhyamānah and

ओ ओ ओ स्यः स्वपत्यस्य पत्नी। सरस्वती तद्गृणते वयो घो ३मा३ पो ३। ऋ० १० ३०। १२

The first word in each half-rich is written with 16 nyūnkha okāras added after its second vowel, comprising three plutas and thirteen ardbokāras.

<sup>1</sup> The Shadvinisa Brāhmaņa 1.1.8-28 explains in detail the several parts of the Subrahmanyā formula (nigada) as follows:

सुब्रह्मण्यो ३म् (repeated thrice), इन्द्रागच्छ, अहत्यायं जार, कौशिकब्रुवाण, गौतमञ्जूवाण इत्यहे सुत्यामागच्छ मधवन् ।

Then the remaining formula (nigada-iesha) is repeated

देवा ब्रह्माण आगच्छतागच्छतागच्छतेति

(cf. Panini, I.2.38).

Here brahmānah is explained as mannshyadevāh referring to Brāhmaņas who are full of reverence and learning (świrnvāmso'nūchānāh, Šad. Br. 1.1.28).

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samindhate used in them. Sometimes extra verses are brought in from outside, e.g. ekavimisatim anubrūyāt pratishṭhākāmasya, i.e. the person desirous of stability should use 21 sāmidhenīs. In such cases the extra verses should be accommodated between samidyamānavatī and samiddhavatī, and all the verses between them are therefore called dhāyyās (sūtra, III.1.129).

The mention of these minute details shows that Pāṇini was in touch with a living tradition of the sacrificial ritual or yajñas. The title pūtakratu seems to have assumed a new significance, denoting the man whose mind was purified by the potions of Soma drunk at the Kratus. His wife, Patnī, who was his partner in the sacrifices (yajña-saṃyoga, IV.1.33) shared in this distinction and was thence called pūtakratāyī (IV.1.36).

The institution of yajñas had a vital economic interest for the officiating priests in that they received the dakshinā or sacrificial fee about the distribution of which instructions are contained in the law-books. We are told that the particular sacrificial guerdon was called after the name of the sacrifice for which it was paid (Tasya cha dakshinā yajñākhye-bhyaḥ, V.1.95). Examples are cited of the particular fees paid at the Rājasūya, Vājapeya and Agnishtoma sacrifices, called āgnishtomikī, etc., of which minimum units must have come to be fixed. The word dakshinya was applied to one whose merits entitled him to receive the proper dakshinā (V.1.69).

The social relationships arising out of sacrifices as between priests and yajamāna constituted one of the happiest features of domestic life. Patañjali refers to these as srauva sambandha (I.119) distinguished from those of blood (yauna), economic life (ārtha), and academic relationships (maukha). He also refers to certain priests marked by red turbans on their heads (lohitoshnīshā ritvijah, I.1.27 I.826) officiating for the Vrātyai (Kāt. Śr., XXII.3.15).

## CH. VI, SECTION 3. ASCETICS

Pāṇini refers to religious mendicants as bbiksbus (III.2. 168) from their obligatory duty of begging; whence they were also known as bhikshāchara (III.2.17). The ordinary beggar was known as bhikshāka (III.2.155). Pāṇini mentions both Brahmanical ascetics and heretical sects. As to the former he mentions those following the Bhikshu-sūtras promulgated by Pārāśarya (IV.3.110), and Karmanda (IV.3. 111); of the latter reference is made to Maskari mendicants (maskarī parivrājaka, VI.1.154) who were most probably the followers of Makkhali Gosāla. The term tāpasa (V.2.103) or tapasvin (V.2.102) was applied to an ascetic practising penance. This was denoted by the special root tapasyati (III.1.15). The several epithets like samī, damī, yogī, vivekī and tyāgī (III.2.142) were indicative of the stages of spiritual culture. There are also two other terms danta and santa (VII.2.27), signifying control of the senses and the mind. The use of the term yogī points to Yoga as a system of spiritual discipline then known.

A mendicant subsisted on what he obtained by begging. The word sarvānnīna was applied to a person who accepted all kinds of food in his begging rounds (V.2.9). The Kāšikā states that a monk indiscriminately accepting alms from persons was so called. Some ascetics lived by gleaning corn (Unchhati, IV.4.32). The unchhavritti ascetics held stock of corn to last for some time. In sūtra VI.2.9. Pāṇini explains the word śārada as 'new'. Literally śārada should denote that which belongs to the Śarad season. The transition of meaning can be understood from Manu stating that a muni should gather his stock of corn twice a year, which was called vāsanta and śārada respectively after the names of the two crops harvested annually

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(Manu, VI.11). It is further laid down that he should renew his clothing and corn in the month of Aśvayuja, i.e. the beginning of autumn (Manu, VI.15). These fresh stocks obtained in Śarad were responsible for the secondary meaning of śārada as 'new'. The word naikaţika (nikaţe vasati, IV.4.73) is taken by the commentators to refer to a monk who had become a Vānaprastha, and in obedience to the rules of his order took his abode near the village outside it. Similarly kaukkuţika is taken by the Kāŝikā as a mendicant who walks with his gaze fixed to the ground to avoid harming life (IV.4.46).

There were also sham ascetics, called dāṇḍājinika (V.2.76) i.e. one who passes for an ascetic by the outward signs of staff and deer-skin only.

AYAHŚŪLA—Pāṇini refers to a class of false ascetics known as āyaḥśūlika, 'who flourished by the method of ayaḥśūla or iron spikes' (V.2.76). Patañjali's comment is of some historical interest. 'If ayaḥśūla literally means an iron spike, the word so formed will apply to a Śiva-Bhāgavata which is not the intention of Pāṇini's sūtra. Therefore the term ayaḥśūla indicates the practice of violent methods (rabhasa) to recruit followers as distinguished from the softer method of persuasion and instruction' (mṛidu nḥāya, Bhāshya, V.2.76). Patañjali here gives the information that there was a sect of the Siva-Bhāgavatas who worshipped Śiva as Bhagavān and whose outward sign was an iron trident (Ind. Ant., 1912, p. 272). As opposed to them the āyaḥśūlika Śaivas pierced their tongue or arms or other parts of the body with iron prongs and extracted forced sympathy.

MASKARIN—Pāṇini mentions Maskarin as a parivrājaka (VI. 1.154, Maskara-maskariṇau venu-parivrājakayoh). Here Maskarin is taken to be the name of Maskarī Gośāla, the founder of the Ājīvika order and a contemporary of the Buddha. Patañjali enlightens us on this point as follows: 'A Maskarin parivrājaka is not so-called because there is a maskara (bamboostaff) in his hand. What else is then the explanation? Do not

perform actions, but seek peace as the highest end'. This is their teaching, who are therefore called Maskarins' (Mā krita karmāni mā krita karmāni, šāntirvab šreyasītyābāto Maskarī parivrājakah, Bhāshya, III.96). No doubt Patanjali's reference is to the philosophy of inaction taught by the great teacher Makkhali Gosāla whose identity with Maskarī thus become a certainty. He was a Determinist who ascribed every cause to fate or destiny (niyati). He held that the attainment of any given condition or character does not depend either on one's own acts, or on the acts of another, or on human effort. There is no such thing as power, energy, human strength or vigour. All beings are bent this way and that by their fate. In his system chance (yadrichchhā) has no place, but everything is ordered by an immutable Fate (Niyati) (Dict. of Pāli Proper Names, II.398). According to Buddhist books Makkhali was considered by the Buddha as the most dangerous of the heretical teachers.

The identification of Maskari with the founder of the Ajīvika sect, if accepted as is highly probable, is of the utmost importance for the relative chronology of Panini himself. Another evidence in the Ashtādhyāyī supports Pāṇini's knowledge of the philosophical school of Makkhali. He refers to three kinds of philosophic beliefs (mati), viz. Āstika, Nāstika and Daishtika (IV.4.60). Mati here corresponds to ditthi of the Buddhists signifying a philosophic doctrine. The Astika philosophers were those whom the Buddhist books call Issarakāranavādī or the Theists, who held that everything in the universe traces itself to Isvara as the supreme cause (ayam loko issaranimmito, Mehta, Pre-Buddbist India, p. 333). The Nāstika philosophers correspond to those who are called Natthikaditthi in Buddhist works (C. D. Chatterji, A Hist. Character in the Reign of Aśoka, Bhandarkar Com. Vol., p. 330). These included the Annihilationist school of another great teacher Ajita Keśakambali (ito paralokagatanāma n'atthi, ayanı loko ucchijiati, Jāt., V.239). This was a materialistic

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doctrine famous as the Lokāyata school. The third category of thinkers who are mentioned as Daishṭika by Pāṇini certainly refer to the followers of the determinist philosophy preached by Makkhali Gośāla who repudiated the efficacy of karma as a means for improving the lot of human beings.

In the canonical scriptures of the Jains, Makkhali Gosāla has been mentioned as Gosāla Mańkhaliputta (*Uvāsaga Dasāo*, Hoernle, p. 97), while in the Sanskrit Buddhist texts he figures under the name of Maskarī Gosāliputra (*Divyāvadāna*, p. 143) (Chatterji, op. cit. p. 331, who concludes that Makkhali was undoubtedly a Maskarī ascetic). The views of this teacher are echoed in the Brahmanical literary tradition under the name of Mańki who discarded *paurusha* in favour of a belief in destiny alone (*Suddham bi daivamevedam baṭhe naivāsti paurusham*) and preached *nirveda* (cf. the doctrine of *Sānti* attributed to Maskari in the *Bhāshya*) as the best principle (*Sāntiparvan*, Ch. 177, vv. 1-14).

As Mr. C. D. Chatterji has shown there were various traditions about the accurate form of Gośāla's name; Mańkhali was the form according to the Jaina Prakrit and a tradition in the Bhagavatī Sūtra makes him the son of a mendicant or beggar (Mańkham, Bhag. Sūtra, XV.1). We have no doubt that Mańki of the Mahābhārata represents the name Mańkhali in an abbreviated form. Pāṇini explains Gośāla as one 'born in a cowshed' (sūtra, IV.3.35), which accords with the traditional explanation of this part of Makkhali's name.

ŚRAMAŅA—Pāṇini refers to Śramaṇas and unmarried female ascetics (kumārī śramaṇā, II.1.70). This sūtra is connected with another in the Ashṭādhyāyī, viz., Kumāraścha (VI.2.26) which regulates the accent of the word kumāra in such compound words as kumāra-śramaṇā and others of this class. This gaṇa also mentions kumāra-pravrajitā, and kumāra-tāpasī, a girl embracing the life of a wanderer, and a girl taking to penance. In the oldest Śrantasūtra literature the meaning of śramaṇa is an ascetic in general; for example, in Baudhāyana

a muni is described as śramana and asked to offer purodāša to Agni standing in knee-deep waters of the Sarasvatī (Band. ŠS,. XVI.30, ASB, edit., p. 276).

Patañjali, however, states that the Śramaṇas and the Brāhmaṇas belonged to different religious groups whose opposition was of a permanent nature (yeshāin cha virodhaḥ sāśvatīkaḥ, Pāṇini, II.4.9, ityasyāvakāsaḥ, Śramaṇa-Brāhmaṇam, Bhāshya, I.476 on sūtra II.4.12). It shows that Śramaṇa in grammatical literature referred to non-Brahmanical ascetics.

Early Buddhist literature distinguishes between Brahmanas and Sramanas as distinct ascetic orders. King Alabu addresses the Bodhisattva as Samana (Jat., III.40). The Udana says that there were very many and various sectaries of Sramanas and Brahmanas, all Parivrajakas, followers of different Ditthis, i.e. Daršanas or Systems, and organisations (sambabulā nānā-Samana-Brāhmanā paribbājakā nānāditthikā nānādittbi-nissayanissitā, P. T. S. edition, p. 66-67). The Anguttara (IV.35) mentions two classes of ascetics whom it calls Parivrājakas, viz. (1) Brāhmana and (2) Annatitthiva. i.e. other non-Brahmanical ascetics. The Greek writers of Alexander's time also noticed these two classes of ascetics, the Brāhmanas and Śramanas (Strabo, XV.1.59, M'Crindle, 1901, p. 65, footnote). In the inscriptions of Asoka the Brahmana and the Śramana ascetics are separately mentioned as worthy of equal honour.

The reference to monk's garment (chivara), and the verb sainchivarayate, 'he dons the monk's robe' (III.1.20) again smack of the institution of Buddhist monks, as chivara signified only monk's dress (cf. tichivara, Jāt., III.471; painsukūla chivara, Jāt., IV.114).

The word Arbat was applied to a person worthy of reverence (Arbah prasamsāyām, III.2.133). The state of being an Arbat was ārbantya (arbato num cha, Gaṇa-sūtra, V.1.24). Pāṇini refers to a class of ascetics called yāyāvara (III.2.176), According to the Baudhāyana Dharmasūtra, 'To be a yāyāvara means that one proceeds by the most excellent livelihood' (vṛittyā varayā yāti, III.1.4), and 'the word śālīna is used for them because they dwell in houses (śālā, III.1.3). Most probably it referred to those house-holders who like Janaka lived in their home although following the ascetic discipline. The Śrautasūtra of Baudhāyana adds that, even when itinerant, the Yāyāvara mendicants halted on the way and performed fire oblations (XXIV.31, तत्रोबाह्यन्ति यायावरा ह वै नामध्य आसँस्तेऽञ्चन्य आम्बेस्ते समस्तमजुह्वु:).

# CH. VI, SECTION 4. RELIGIOUS BELIEFS & PRACTICES

The other aspects of religious life included domestic rites, vows like Chāndrāyaṇa (V.1.72), and Japa or repetition of mantras (I.2.34). One who took the vow of restraint of speech was called vāchanyama (III.2.40), and similarly the vow to sleep on hard ground sthāndila (IV.2.15). These epithets applied to one observing pārāyāṇa, a Brahmachāri or a bhikshu (IV.2.15). One who silently performed Japa as a habit (tat sīla) was called jañjapūka (III.2.166). Such muttering would sometimes be for mere show or a sham practice (bhāvagarhāyām, jañjapyate, III.1.24). Reference is also made to the offering of bali, probably to different deities (II.1.36), e.g. Mahārāja-bali offered to the Mahārāja class of deities like Kubera. Special food stuffs selected for preparing bali were called bāleya (V.1.13).

\$RĀDDHA—Reference has already been made to the fire kavyavābana (III.2.65) to carry oblations to the manes. The Pitris are mentioned as devatās, deities to whom oblations called pitryam were offered (IV.2.31). The śrāddba ceremony held in the Śarat season (the Pitripaksba in Āśvina) has been mentioned as śāradika śrāddba (IV.3.12). One who dined at a śrāddba was marked out as śrāddbī, śrāddbika (śrāddbamanena bbuktam, V.2.85), but Kātyāyana points out that the epithet was applied to that person only for that particular day (II.389). The necessity for this term seems to have arisen from the fact that the śrāddba-bbojī was required to perform some purificatory rites on that day. A śrāddbika Brahmachārī would be marked out from other students and would get leave from his class for performing japa, etc.

Religious tonsure was in vogue (Madrāt parīvāpaņe, V.4. 67), the tonsurer being called madramkara or madrakāra (III.2.44).

BELIEFS—Belief in divination from bodily signs is mentioned in sūtra III.2.52 (Lakshaņe jāyā-patyoshṭak as read with III.2.53). The marks on the body of the husband or the wife were believed to have effect in respect of each other, e.g. jāyāghnas-tilakālakaḥ, 'the black mole indicative of wife's death'; patighnī pāṇirekhā, 'the line on hand indicative of husband's death'. Probably this topic came under Angavidyā to which references is found in the Rgayanādi gaṇa (IV.3.73), in the Brahmajāla sutta of the Dīghanikāya and some Jaina Āgamas.

Questioning a foreteller about future good luck was called vipraśna. The sūtra Rādhīkashyor-yasya vipraśnah (I.4.39) deals with its linguistic form e.g. Devadattāya īkshate, 'the astrologer is busy calculating about the future of Devadatta'.

Mantras to captivate the heart of others (vasīkaraņa) were known as bridya (bridaya-bandhana rishi, IV.4.96, in which rishi=mantra or veda).1

The idea that certain days (punyāha, V.4.90) and nights are auspicious (punyarātra, V.4.87) was also prevalent. The idea that good actions lead to merit is also referred to (Saptamyāh punyam, VI.2.152), e.g. veda-punyam, adhyayana-punyam. Good and bad actions originated from their doers called punyakṛit, sukarmakṛit, or pāpakṛit (III.2.89). Transgression of moral conduct was kshiyā (=dharma-vyatikrama, āchāra-bheda), expressed by a special linguistic form, using the exclamatory particle ha (VIII.1.60), and pronouncing the verb with pluta accent, e.g. स्वयं ह एयेन याति ३ उपाध्यायं पदानि गमयित 'Fie on the pupil himself riding in a chariot and making the teacher drag on foot!'; स्वयं होदनं भुंकते ३ उपाध्यायं सक्तून पाययित 'Fie on the pupil himself feasting on rice and suffering the teacher to live on groats!' (VIII.2.104).

Heinous sins (mahāpātakas) like bhraunahatya (VI.4.

<sup>&</sup>lt;sup>1</sup> Para-bridayam yena baddhyate vašikriyate sa vašikaraņa-mantro bridya ity-uchyate, Kāšikā.

174) and brahmahatya (III.2.87) are mentioned (cf. Manu, XI.54).

Amongst moral virtues, Pāṇini mentions prajñā, śraddhā, tapa, tyāga, viveka, dbarma, śama, dama (VII.2.27; III.2. 142). Persons endowed with high moral character were recipients of social honour as śāmī, damī, tyāgi, vivekī, dbarmī, tapasvī. Persons who performed meritorious actions relating to life in this world and in the other (Ishṭa and Pūrta) were honoured as ishṭī, pūrtī (V.2.88). Religious gifts constituted a pious act (dharma) and the use of one's wealth for such objects was called upāyoga. These benefactions were expressed by such linguistic forms, as sahasram prakurute, sahasram vinayate (I.3.32; I.3.36).

DHARMA—The word dharma has a two-fold meaning in the Ashṭādhyāyī; firstly dharma denoted custom or āchāra, as in the Dharmasūtras (cf. Kāśikā on sūtra IV.4.47). That which was in accordance with custom was called dharmya (IV.4.92, dharmādanapetam). Pāṇini explains dharmya as approved by local usage or custom (VI.2.65; cf. Kāśīka, dharmyam ityāchāraniyatam deyam uchyate). Even the charges levied as legal dues, e.g. toll-tax, are called dharmya, because they were sanctioned by usage. Secondly dharma denoted religious or moral duties, as in the expression dharmam charati, dhārmikah (IV.4.41).

## CH. VI, SECTION 5. PHILOSOPHY

INTELLECTUAL FERMENT—The philosophic thought of ancient India in the period from about the eighth century B.C. was marked by a new awakening and intellectual upheaval in her history. It led to the foundation of various schools centering round different doctrines as to the ultimate cause and nature of the world and soul. The atmosphere was charged with the keenest intellectual ferment as if a new god of wisdom had become manifest.

INA-Patañiali takes the word Iña to mean Brahmanas as embodiments of jñāna or spiritual knowledge and refers to their descendants who carried on the ancient philosophic tradition. The term probably originated in the Upanishads (Jnah kālakālo gunī sarva-vid yab, Šv. Up., VI.2). Patanjali also mentions Jña as a deity named Jña Devata, to whom householders were to offer special oblations (Jñā devatāysa sthālī pākasya Jñah sthālī pākah, Bhāshya, VI.4.163; III.232). Pāņini mentions Jāah (III.1.135) as an independent word signifying 'One who knows'. It appears as if the monosyllabic Jña stood for the ideal of the Sophistic movement beginning in the Upanishads and reaching its climax in the time of the Buddha and Mahāvīra. Patañjali refers to celebrated families of these Sophists as jūānām Brāhmanānām abatyam, descendants of Brāhmanas who followed the Jña deity and were themselves known as Jña. (Bhāshya, IV.1.1; II.190).

Pāṇini refers to a philosophical doctrine promulgated by a thinker as mati (IV.4.60), corresponding to Buddhist diṭṭhi, and the means of knowledge as matya (matasya karaṇam, IV.4.97).

DIFFERENT SCHOOLS OF THOUGHT-Panini classifies the views of various philosophical thinkers under three cate-

gories according to the basic points of view implied in their teachings. They were (1) Āstika, (2) Nāstika and (3) Daishţika (Asti nāsti dishţam matih, IV.4.60). A list of principal philosophic doctrines or matis is preserved in the Śvet. Up. I.2 (also Charaka, Sūtrasthāna, ch. 25; Suśruta, Śārīrasthāna, I.11). At the head of the list appears Kāla or Time as the cause of the world, known as Kālavāda (Mūla-pariyāya Jātaka, II.pp.260-61). It occurs in the Mahābhārata in a more elaborate form (Śāntiparva, 220. 29-110). According to Pāṇini, the time-denoting words had attained the status of a deity (devatā) fit to be worshipped (IV.2.34). Stars and Seasons (IV.2.31, Ritur-devatāsya ritavyam) were similarly deified.

Next is Svabbava, a view which had its counterpart in the Buddhist Akiriyā-vāda or doctrine of Non-causation advocated by Pūrana Kassapa (cf. Śantiparva, 215.15-16). Yadrichchbā or fortuitous origin was represented by the Abetuvadins who put forward the hypothesis of chance (cf. Santiparva, 168.21-22; also called paryāya-vāda). The Niyativāda corresponds to the Determinist school of Makkhali Gośāla (cf. Śāntiparva, ch. 171). The view of the Bhūtas (the four material elements) creating the world was represented in the materialistic doctrine of the Lokayata school. The Annihilationist school of Ajita Kesakambali (Uchchhedavādins) took the same view (chātum-mahābhūtiko'yam puruso). Yoni or the privileges and incidence of birth as a potent factor directing the world of men and animals was probably represented by the Militarist doctrine which believed in the efficacy of force to rectify human ills. (Khattavijjā-vāda, Jāt., V.240; cf. Santiparva, ch. 173 for Yonivada doctrine). Lastly, Purusha or Devamahimā or Power of the Creator was taken to be the cause of the cosmos, a view termed in the Jatakas as Issarakāranavāda (Jāt., V.238). The Svel. Up. advocating Purusbavada, refers to other thinkers, like the advocates of Svabhava and Kala, as barimubyamāna, i.e. holding erroneous views.

These distinctions of philosophical thought mentioned in the Svet. Up. and the Maba-Bodhi Jataka (Jat. V, p. 228 ff.) are presupposed in Pāṇini. For example, Pāṇini's Āstika mati is the Theistic school of Purusha or Issarakāranavāda. We know that orthodox Brahmanical thought laid great stress on this view which was developed in the earliest Sankhya and attained its climax in the Vedānta sūtras. Pāṇini also mentions by name the Bhiksbusūtras of Pārāšarya (IV.3.110), which probably denoted the earliest Vedanta treatises written in sūtra form. The nucleus of such a text did exist in Panini's time. The Purusha or Adhyātma school ultimately absorbed other minor doctrines as Prāna, Iyoli, etc., by evolving a synthesis of all such causes in Purusha, and in course of time other views on matter and creation aligned themselves with that view, so that Astikavada as expressed in a number of orthodox schools became the most predominant pattern of Indian philosophy.

Pānini's Nāstika mati represents the views of those who were opposed to the school of Purusha and they included amongst them rather earlier philosophers of various denominations, such as the believers in Svabhāva (Non-causationists), Yadrichchbā (Fortuitous Originists, Abetuvādin), Bhūtas (Materialists) of which Ajita Keśakambalin was the famous exponent (cf. Santiparva, 172.13-18), and Niyati (Determinist). Of these Nāstika schools Pānini has noted the name of Maskarī (Makkhali Gosāla) and his Dishta-mati or the view of Niyativāda, which as we have discussed above was based on the repudiation of action (kiriyā) and human edeavour (viriya). Patanjali states the pivotal points of their doctrine in explicit words (Bhāshya, VI.1.154; III.96).1 The Mahābhārata deals at length with the philosophic approach of such thinkers, citing five main points of their belief, viz. equanimity or indifference towards creatures (sarva-sāmya), immobility or absence

<sup>&</sup>lt;sup>1</sup> मा कृत कर्माणि मा कृत कर्माणि शान्तिर्वः श्रेयसीत्याहातो मस्करी परि वाजकः ।

of endeavour (anāyāsa), straightforward utterance (satyavākya), complete disregard of action leading to cynical peace (nirveda) and indifference to seeking knowledge (avivitsā, Śāntiparva, 171.2). There Mańkhali is presented as the sage Mańki who cheated of his two bulls by a cruel fate dismisses all effort as stupid (Śuddham bi daivamevedamato naivāsti paurusham, Śāntiparva, 171.12). The followers of this school were the Daishṭikas or Determinists.

LOKĀYATA-The name of this school which was identical with the theory of elements as the prime cause (Bhūtavāda and Uchchhedavāda) is not found in any sūtra, but occupies the second place in the Ukthādi-gana (IV.2.60). A teacher and a student of this doctrine were both known as Lokayatika. There is a strong possibility that the Lokayata School was known to Pāṇini. Kautilya refers to the Lokāyatas (Arth. p. 6). The antiquity of the school is also suggested by a reference in the Dīghanikāya, and by the mention of a Brāhmana wellversed in the Lokayata doctrine asking the Buddha a series of questions (Samyuttanikāya; Dict. Pali Proper Names, II.787). A Jātaka passage refers to Lokāyatika doctrine (na seve Lokāyatikam, VI.286). The Kāmasūtra has preserved an intensely worldly-wise saying of the Lokāyatikas, Varam sāmsayikānnishkād-asāmsayikah kārshāpana iti Laukāyatikāh (Kām., I.2.30). 'A silver Kārshāpaṇa in hand is worth more than a gold Nishka in the offing', with which may be compared the modern saying 'A bird in hand is worth two in the bush'. There is an interesting reference in Patañjali, Varnikā Bhāgurī Lokayatasya, 'the view-point of Bhaguri is a specimen of the Lokāyata doctrine (III.325; VII.3.45), which shows that Bhaguri was an exponent of the Lokayata school. (Cf. also varttikā Bhāgurī Lokāyatasya, i.e., the way of life preached by Bhāguri is that of Lokāyata, III.326). The Chārvākas of the Lokayata school are mentioned in an old grammatical illustration as models of dialectical proficiency (jñāna, I.3.46) and convincing exposition of their doctrines (sammanana,

I.3.36, Kāšikā and Chāndra, I.4.82). Chārvī or Chārvāka was not a proper name but an epithet derived from their brilliant discourses. A Lokāyatika appears as a friend of Duryodhana. Jābāli, a counsellor of Daśaratha, was also a follower of Lokāyata. The antiquity of the Lokāyata School being thus indicated, it must be one of those comprised in the Nāstika mati of Pāṇini.

Of the terms of Yoga philosophy Pāṇini mentions yama, niyama, sañiyama (III.3.63), yogī (III.2.142); of Nyāya, nigṛibyānuyoga (VIII.2.94) which were the same as nigṛaha (Nyāya, I.2.19; V.2.1) and anuyoga (ibid V.2.23) meaning defeat and censuring of an opponent. Parimaṇḍala in sūtra VI.2.182 seems to be the same technical term as Vaišeshika VII. 1.20, signifying an atom.

OTHER PHILOSOPHICAL TERMS—Ātmā: Pāṇini uses the term Ātmā in such expressions as ātma-prīti, ātma-māna and ātmanīna (ātmane bitam, V.1.9). Sva was the word for ātman as Self. Jīva in such terms as jīva-nāšam našyati (III.4. 43) means 'life'. The Rigvedic word akshetravid (Rigveda, X.32.7, akshetravit kshetravidam by-aprāt) occurs as akshetrajāa in Pāṇini; and a new word, akshaitrajāa, had come into existence to denote absence of self-knowledge (VII.3.30).

Prāṇabhṛit or prāṇin, 'one endowed with prāṇa' included both men and animals, as distinguished from herbs and trees or the plant kingdom (IV.3.135). Pāṇini also distinguishes animate kingdom, chittavat (I.3.88) from achitta or the inanimate world (IV.2.47).

Kātyāyana in one place invokes the doctrine of sarvachetanāvatva (III.1.7; II.15), implying that in the higher philosophic sense which may also influence grammatical operations

वदते चार्वी लोकायते । भासमानो दीप्यमानस्तत्र पदार्थान्व्यक्तीकरोति । बदते चार्वी लोकायते । जानाति बदितु मित्यर्थः । काशिका, I. ३, ४७.

the distinction of animate and inanimate does not exist. Pāṇini, however, seems to have taken a more practical view. Patanjali was probably referring to old definitions when he advocated the view of the two-fold nature of ātmā (II.8). He adds that our physical being (sarīrātmā) acts and the effect of pleasure and pain is felt by the antaratma, and conversely our mind acts and the effects of sukha and dubkha are felt by the physical body. What in Pānini's time was called svānta (VII.2.18) seems to be the same as antarātmā, referring to mind as the internal organ of Self or Sva. Pānini also refers both to the gross body as experiencing pleasure (kartuh śarīrasukbam III.3.116), and to its experience by the mind (sukbavedanā III.1.18). Sukha is clearly defined as pleasant experience (anulomya, V.4.63) and dubkha as unpleasant (prātilomya, V.4.64), same as anukūla-vedanīya and pratikūlavedaniya of the Nyāya school. The definition Sva-tantrali Kartā (I.4.54), held good both in grammar and as reflecting a philosophical doctrine.

INDRA AND INDRIYA-Indra, the famous Vedic deity is referred to in the Ashtādhyāyī by his older synonyms as Marutvat (IV.2.32), Maghavan (IV.4.128), Vritrahan (III.2.87). Pānini also records the synonym Mahendra (IV.2.29), a word used only thrice in the Yajurveda in a late prose formula (VII. 39-40; XXVI.10). The conception of Mahendra seems to have arisen out of that of the Chief Vital Air (Madhya Prāna) enkindling others through the five sense-organs (Satapatha, VI.1.1.2), symbolised as a group of Five-Indras (cf. Udyogaparva, 33.103, Pandoh putrah pancha Panchendra-kalpah). But the reference to the new metaphysical meaning of Indra as Self is truly remarkable (V.2.93). This new meaning had been evolved in the religio-philosophical cogitations of the Brāhmanas where new adhyātma interpretations of the hymns were being discussed. Pāṇini derives Indriya, 'sense-organs', from the word Indra meaning 'Self'. He sums up the various derivations in five clauses of equal rank, and also provides for

other possible views by adding the phrase iti vā in the sūtra.' We learn from Yāska that the derivation of Indra was a major point of discussion in which eminent teachers like Āgrāyaṇa and Aupmanyava had participated. The fifteen different etymologies of Indra compiled by Yāska (Nirukta, X.8; cf. H. Sköld, The Nirukta, p. 210) were taken from different Brāhmaṇa and Āraṇyaka passages, some of which can still be traced (cf. my article 'Studies in the Grammatical Speculations of Pāṇini', J.U.P.H.S., April, 1936, pp. 95-104). Pāṇini also refers to them as shown below.

(i) Indra-lingam; the sense-organs are the outer sign of Indra. According to the Kāšikā Indra here is Ālmā and this meaning goes back to the Maitr. Up., VI.8. So long as the organs function, Indra resides within the body. Indra is the life-giver of the Indriyas: 'Verily, in the beginning there was the Asat named the Rishis who were doubtless the Vital Airs, Prāṇāḥ. The invisible Prāṇa incarnated in the body; he is Indra, propelling by his power the senses which thereby stand as proof of his existence' (Śatapatha, VI.1.1.2). Thus the functioning sense-organs are the visible symbols of life within (Indra-lingam).

(2) Indra-drishtam; the senses were 'seen' or experienced by Indra. Yāska ascribes this opinion to Aupamanyava (Idam daršanād iti Aupamanyavah), a view also expressed in the Aitareya Āranyaka (Idam adaršanī tasmād Indro nāma, III.14). This Aupamanyava was a grammarian mentioned by Yāska as holding a different view about the onomatopoeic derivation of names (III.18). It is likely that Pāṇini took this etymology from Aupamanyava. Idam in the above two citations stands for the non-self, or senses.

(3) Indra-srishtam; the organs were 'created or produced by Indra.' Yāska attributes this view to the teacher Āgrāyaṇa

<sup>&</sup>lt;sup>1</sup> इन्द्रियम् इन्द्रलिंगम् इन्द्रदृष्टम् इन्द्रसृष्टम् इन्द्रजुष्टम् इन्द्रदत्तम् इति वा । (४।२।६३)

(Idam karaṇād iti Āgrāyaṇaḥ, X.8), and a similar suggestion is made in the Aittareya Up. (II.1, Tā etā devatāḥ srishṭāḥ).

- (4) Indra-jushtam; 'loved by Indra', who feels delighted in the company of the senses. The indriyas are the receptacles of Soma which is Indra's delightful drink. The Aitareya Br. (II.26) describes the sense-organs as the Soma-cups (Soma-graba), and since Indra loves his sweet mead he is never so happy as when he is in the company of the senses (cf. Indra as indau ramate, Nir.). The epithet Indra-jushta is thus appropriate in view of the intimate relationship between the Self and the sense-organs.
- (5) Indra-dattam; 'assigned to their respective objects of enjoyment by Indra' (ātmanā vishyebhyo dattam yathā-yatham grahanāya, Kāsikā). The same view is found in the Aitareya Up., describing the primeval Self as assigning to the senses their respective functions in the human person (purushe): 'He said to them: Enter into your respective abodes.' Pāṇini's Indra-dattam is in relation to this old legend.
- (6) Iti Vā. This part of the sūtra provides for an unknown quantity and puts the grammarian's seal of approval on such other derivations as were taught by ancient teachers but not included in the above list of five.\(^1\) The Kāšikā brings out the spirit of the words by stating that the word iti points to the manner of derivation which thus made room for other similar etymologies also, all of them being of equal force. For Pāṇini to be so liberal with words is rather exceptional and points to the synthetic spirit in which he had conceived his work.

PARALOKA (OTHER WORLD)—A belief in the other world and in the continuity of Self in after life was an article of faith with the people who so conducted themselves in this life as to attain happiness in the next world (Sidhyaterapāralaukike VI.1.49). The sūtra Lipsyamāna-siddhau cha

<sup>&</sup>lt;sup>1</sup> For seventeen similar crude derivations of *Indra*, see Fatah Singh, *Vedic Etymology* (Kota, 1952), p. 94.

(III.3.7) refers to the attainment of supreme objective (siddhi) which, according to the commentators, was Svarga. In the Vedas Svarga is called Nāka. The word nāka is derived in the Brāhmaņas (ŚB., VIII.4.1.24) from na, 'not', and aka, 'pain', because those who go there are free from sorrow (Vedic Index, I.439). Yāska and with him Pāṇini splitting the word into na and aka (VI.3.75) retain its association with the final abode of happiness, as heaven was believed to be in the earlier literature.

Păṇini also mentions Nissreyasa (V.4.77) which in the Upanishads denoted supreme bliss or beatitude into which the soul entered. On the contrary, the word Nirvāṇa was also known to the Ashṭādhyāyī (VIII.2.50). It denoted something negative, i.e. extinction, as of a lamp or flame of fire. The term was possibly associated with Buddhism, as indicated in Kāšikā's example nirvāṇo bhiksbuḥ.

#### CHAPTER VII

### POLITY AND ADMINISTRATION

#### 1. MONARCHY

TITLES AND TERMS-Pānini refers to a monarchical state as Rājya (VI.2.130), derived from rājan or king, as distinguished from Sangha or Republic. In a well-known passage of the Aitareya Brāhmana, Rājya occurs as one of the several classes of sovereignty to which rulers were consecrated at the time of their coronation (VIII.15). The term Isvara in the Ashtādbyāyī denotes a rājā with reference to his supreme power, as in sūtras 1.4.97, and II.3.9 (Yasya chesvaravachanam saptamī), which relate to grammatical formations for naming the king of a country. In early literature Isvara meant an earthly king and not 'God'. Patanjali cites an old example, adhi Brahmadatte Panchālāh, i.e. 'the Panchālas are under the kingship of Brahmadatta'. In the Bhashya, rājā of sūtra II.4. 23 is taken as a synonym of ina and isvara (I.177). The Nighantu makes rāshtrī, arya, niyutvān and ina as names of isvara. Of these arya is referred to by Panini as a synonym of svāmī (III.1.103). The latter word is derived to denote one who possesses aisvarya or sovereignty (Svāminn-aisvarye, V.2.126). Patanjali points out that the idea of aiśvarya is inherent in the word itself and is not the result of any suffix (nāyam pratyayārthah, II.400). It appears that svāmī implying aisvarya primarily denoted a king,

Another title of rājā in Pāṇini is bhūpati (VI.2.19), and here also aiśvarya is an attribute of his overlordship (patyān-aiśvarye, VI.2.18). Bhūpati, therefore, means 'lord of the earth'. The word adhīpati mentioned along with svāmī and išvara (II.3.39) occurs in the coronation formula of the Aitareya Br. in a form of sovereignty called ādhipatya. Jaya-

swal understood it as overlordship over neighbouring states, who paid tribute to the Adhipati (cf. Ādi, 103.1; 105.11-15, 21). The words Samrāj and Mahārāja were old kingly titles, of which the former is mentioned in sūtra VIII.3.25, and the latter although mentioned twice (IV.2.35; IV.3.97) does not refer to a king, but to one of the Chatur-Mahārājika gods.

The king's relationship to territory (bhūmi and pṛithivī) is indicated in his titles sārvabhauma and pārthiva based on his sovereignty or aiśvarya (Tasyeśvaraḥ sarvabhūmi-pṛithivī-bhyām aṇañau, V.1.41-42). One's own kingdom was called pṛithivī; but sarvabhūmi denoted the whole country and was the same as mahāpṛithivī of the Mahāgovinda sutta of the Dīgha-Nikāya. The Sārvabhauma after conquest of the earth and annexation became entitled to perform an aśvamedha (Āpas. Śr., XXX.1.1; cf. Bharata Sārvabhauma, Ādi, 69.45-47). The title also occurs in the list of the Ait. Br.

COUNCIL OF MINISTERS (PARISHAD)-Panini is acquainted with the parishad as a recognized institution of his time of which he mentions three kinds, (1) social (IV.4.44), (2) literary (IV.3.123), and (3) political (V.2.112). A member of a parishad was called parishada and parishadya (IV. 4.101). He must be duly qualified or eligible for it (sādbu). One who joined the meeting of a parishad was called parishad ya (parishadam samavaiti, IV.4.44). This parishad or social congregation was like the samāja. Parishad as a political institution is mentioned in sūtra V.2.112 (Rajah-krishy-āsuti-parishado valach) prescribing the form parishadvala, which the commentators apply to a king with his Council of Ministers (parishadvalo rājā). The Buddhist literature, Kautilya and Asoka inscriptions contain references to this institution. In the Mahāsīlava Jātaka, the king's Parishad consisting of ministers (amachchas) is spoken of as perfectly disciplined to act harmoniously with the will of the king (evain suvinitā kir'assa parisā, Jāt. I.264). Aśoka in Rock Edicts III and VI mentions the Parishad which was summoned to consider urgent matters (achāyike). An authoritative account of the constitution of the Mantri-Parishad is given in Kautilya who describes it as a well-established institution invested with definite constitutional powers in relation to the king and the business of the State (Arth. I.11., p. 26-29).

The particularly happy expression Parishadvalo rājā, 'King-in-Council', current in the political terminology of Pāṇini's time, shows the importance which was attached to the Parishad with reference to the constitutional position of the king in relation to his ministers.

RĀJAKŖITVĀ (III.2.95)—This was another important term of political vocabulary mentioned by Pāṇini in sūtra Rājani yudhi kṛiñaḥ (III.2.95), signifying the institution of rājānam kṛitavān 'one who is a king-maker'. In the Vedic period the Ratnins or High State Functionaries are spoken of as rājakṛits, 'king-makers' (Atharva, III.5.6-7). This political epithet continued up to the Buddhist period: 'The Pali canon employs 'king-maker' as a synonym for ministers (rājakattāro, Dīghani-kāya, Mahāgovinda Suttanta). The Rāmāyaṇa in describing the ministers who put their resolution before Bharata, calls them 'king-makers' (Ayodhyākāṇḍa, 79.1, sametya rāja-kartāro Bharatam vākyam-abruvan; Comm. rājakartāraḥ=mantriṇaḥ, Hindu Polity, II.116).

CHIEF MINISTER—A fact of great constitutional significance with respect to the working of the Hindu monarchy in that early period is mentioned by Pāṇini in the following sūtra:

Misrain chanupasargam asaindhau (VI.2.154).

'The word misra has an acute accent on the final vowel after an instrumental case, when it is not joined with any preposition, and does not mean an agreement with oath (samdbi)'.

On this Kāšikā says: 'Why do we say, not denoting an agreement with oath? Observe Brāhmaņa-miśro rājā, Brāhmaṇaih saha samhita aikārthyamāpannah. Samdhiriti hi paṇabandhen-aikārthyam uchyate'. As Vasu renders the mean-

ing of the Kāšikā: 'The word Saindhi here means a contract formed by reciprocal promises; 'If you do this thing for me, I will do this for you.' Others say, it means close proximity, without losing identity and thus differs from misra in which two things are compounded into one. Therefore, though the King and the Brāhmaṇa may be in close proximity as regards space (deśa-pratyāsattau), they both retain their individuality; hence the counter-example Brāhmaṇa-miśro rājā'. Thus the word miśra points to joint authority between the king and his ministers who shared it in common according to constitutional usage.

This technical meaning of samdhi is recorded in the Arthasastra, which defines it as panabandhah sandhib, 'an agreement with oath is saindh? (Artha. VII.1, p. 263, Trans. p. 293). The agreement of a king with a Brahmana in accordance with the oath of loyalty to the constitution was a feature of Hindu polity. The king, according to Manu (VII. 58), must consult his Chief Minister, who should be a learned Brāhmana, about secret counsels dealing with the six limbs of state-craft (shadgunya, Hindu Polity, 11.119). According to Kautilya also the king's Chief Minister should be a Brahmana: 'The king (Kshatra) who is supported by a Brāhmana, and who has the advantage of the advice of other mantrins, and who is governed by the Sastras, conquers territories unacquired before (Artha. I.8,p.16). It is virtually a restatement of the Vedic dictum Brahmana kshatrena cha śrih parigribītā bhavati, also embodied in Manu (IX.322).

In actual practice also, the alliance of a Kshatriya king with a Brāhmaņa prime-minister or chancellor was the prevailing political arrangement from about the Śaiśunāga period to the reign of Aśoka. The names of some of the great ministers were as well-known as those of the rulers; for example, we find mention of Varshakāra, chief minister of Ajātaśatru, Dirgha Chārayāṇa of king Vidūdabha of Kosala, Yaugandharāyaṇa of Udayana, Chāṇakya of Chandragupta and also Bindu-

sāra, Rādhagupta of Asoka, Pisuna of Pālaka of Avanti (Artha. Comm.), Bharata Rohaka of Chaṇḍa Pradyota, Āchārya Ghoṭamukha of Amsumān of Avanti (Bhagvaddatta, History of India, p. 258), Kaṇinka Bhārdvāja of Parantapa, king of Kosala (Artha. Comm.), and Bābhravya of king Brahmadatta of Panchāla (Matsya Purāṇa, XXI.30). As Jayaswal has observed, the system of noting historically the Prime Ministers' name occurs as a marked feature in Buddhist records (Imperial History of India, p. 17). All these ministers occupied positions of the highest responsibility in the administration and were bound by constitutional ties to the king whose policies they directed so completely.

Pāṇini mentions another political term, Ārya-Brāhmaņa (Āryo Brāhmaņa-kumārayoh, VI.2.58), Honourable Brāhmana', used with reference to the Chief Minister. In the next sūtra, Rājā cha (VI.2.59), Pāṇini refers to Rāja-Brāhmaņa, which as a Karmadharaya compound, would apply to a king of the Brahmana caste, but as a counter-example would refer to the Brahmana of the King. The King's Brahmana was the same as the king's minister mentioned in Brāhmana-miśro rājā. ASHADAKSHINA (V.4.7, SECRET COUNSEL) -It literally means 'that which is not seen by six eyes'. The Kāŝikā explains it to mean deliberation between two persons only, and not more (ashadakshino mantrah, yo dvabhyameva kriyate, na bahubhih). In the political evolution of the Mantri-Parishad and with the emergence of the office of the Prime Minister, there was a tendency to form a smaller body inside the Parishad for more effective and responsible deliberation. As to the number of ministers constituting this Inner Body, Kautilya supplies valuable information recording the views of earlier political thinkers like Piśuna, Pārāśara, Viśālāksha and Bhāradvāja. Kautilya states that the number of ministers should be three or four (Artha. I.15, p. 28). In this matter the most forceful view was that of Kaninka Bharadvaja, the severe theorist who advocated the system of one-minister cabinet (Gubyam eko mantrayeteti Bhārdvājaḥ, Arth. I.15, p. 27). This was the ashadakshīṇa mantra referred to by Pāṇini, i.e. the secret counsel of the king and the chief minister only, in which 'six eyes' had not participated. It signified the same thing as shat-karṇo bhidyate mantraḥ of later literature. Bhārdvāja held that a plethora of councillors betrayed the secret (mantri-paramparā mantram bhinatti, Artha. I.15; cited in the Kāśikā on V.2.10). This view was disputed by Viśālāksha who, perhaps true to the veiled suggestion of his name, was in favour of admitting more ministers to the secret sessions of the council.

The ashaḍakshīṇa business must have related to urgent and important matters of state. Pāṇini refers to ātyayika (Vinayādi gaṇa, V.4.34), urgent business, to which Aśoka also refers in R.E. VI, and so also Kauṭilya: 'Summoning the ministers and the council, the king shall speak to them on urgent matters (ātyayike kārye mantriņo mantri-parishadam chāhūya brūyāt, Arth., I.15). Here mantriņah refers to the Inner Cabinet, and Mantri-Parishad to the fuller Council of Ministers. The ashadakshīṇa deliberations belonged to the former.

Similarly, in the Gaṇa-pāṭha IV.3.118 an act or resolution of the Parishad is called pārishatka.

RĀJA-SABHĀ (II.4.23)—As distinguished from the Parishad, the General Assembly was represented by the Rāja-sabhā. Tradition makes Bindusāra having a Council of five hundred members. As examples of Rāja-sabhā, Patañjali cites Chandra-gupta-sabhā and Pushyamitra-sabhā (Bhāshya, I.177).

The implication of Pāṇini's next sūtra, aśālā cha ('that which is not a building', II.4.24) interpreted with the rule under discussion is that the term Rāja-sabhā, and also its specific names, such as Chandragupta-sabhā, had a two-fold significance, firstly the body of members and secondly the building where the assembly held its session. Even in the Vedic literature we find that Sabhā was the name of an 'assembly' as well as of the 'hall' where the assembly was held (Vedic Index, II.

post-Pāṇinian denoted both the assembly or Great Synod of that emperor and the magnificent pillared hall which has been discovered in the excavations at Pāṭaliputra. The pillared assembly hall was a Vedic model as the word Sabhā-sthāṇu (Vedic Index, II.426) shows. Chandragupta built his sabhā with stone pillars. In this connection we may refer to the expression Kāshtha-sabhā indicative of wooden architecture of earlier times. Chandra and Kāšikā cite it as a counter-example. It is known that the earliest Indian architecture in stone was preceded by that in wood, from which the technical patterns and ornamentation of early Indian art were certainly derived. Therefore, an assembly hall made of wood (kāshtha-sabhā) was a fact of the pre-Maurya period.

According to Ludwig the Vedic Sabhā was an assembly not of all the people but of the Brāhmaṇas and Maghavans or the rich aristocrats (Vedic Index, II.426). The word sabheya, 'worthy of the assembly' is taken by Keith to support this view. Vedic sabheya (IV.4.106) corresponds to sabhya of classical Sanskrit (sabhāyām sādhuḥ sabhyaḥ, IV.4.105), which must have been applied only to those who were privileged to become

members of the Sabhā.

Pāṇini mentions the office and duties of Purohita as Paurohitya (V.1.128). The Purohitādi-gaṇa includes Rājā and also Senāpati implied in the phrase patyanta of the sūtra. According to Kautilya, next in rank to the Chief Minister was the Purohita; after him came the Senāpati; and then the Yuvarāja (Arth. V.3, p. 247). A Purohita was to be learned both in the Veda and in politics (Daṇḍanīti).

MAHISHĪ (QUEEN, IV.4.48)—The queen had an official position in Hindu polity. She was crowned jointly with the king. Pāṇini mentions the chief queen as Mahishī (Aṇ mahishyādibhyaḥ, IV.4.48) and the special term Māhisha must have referred to her allowances in the Civil List, which was a charge fixed by convention (dharmyam, āchāra-yuktam).

In the same gaṇa after Mahishi comes Prajāvatī, mother of princes, and her salary is called prājāvata. Kauṭilya also mentions both the Chief Queen and the mother of princes (Rājamahishi, kumāra-mātṛi) in the Civil List, the former receiving 48,000 and the latter 12,000 silver paṇas per year (Artha. V.3, p. 247). The Chief Queen (Ajja-mahesi) is frequently mentioned in the Jātakas (V.22; VI.31) and distinguished from pajāpatī (I.398; Sanskrit prajāvatī), a title applied to all other queens except the Chief Queen.

Pāṇini mentions the phrase asūryam-pasyā applied to women who lived in the seclusion of the palace where they could not see even the sun. The commentators interpret the term as rājadārāh or the royal harem, which corresponds to Aśoka's orodhana (Skt. avarodhana).

CROWN PRINCE.—The general word for 'prince' in the Ashtādbyāyī is rāja-putra (IV.2.39) and rāja-kumāra (VI.2. 59). The word rāja-kumāra has two meanings (1) a boy king and (2) prince, the latter being a counter-example to the sūtra Rājā cha (rājūah kumārah). Of all his sons the king selected the son of the Chief Queen, as the crown-prince or Yuvarāja. In this connection Pāṇini makes an important reference to Arya-kumāra, i.e. Chief Prince, who was invested with the title Ārya (āryaschāsau kumārascha) (Āryo Brāhmana-kumārayoh, VI.2.58). Ārya appears to be a political title both in Arya-Brāhmana and Arya-kumāra. Samudragupta was addressed as Arya by his father at the time of his selection to the throne (aryo bityupagubya, Allahabad Pillar Inscription). In the Jātakas the crown prince is called uparājā. In one instance, of the two brothers one is made uparājā and the younger one senāpati; on the death of the king the uparājā becomes rājā, and the senāpati becomes uparājā (Jāt. VI.30).

RĀJA-KUMĀRA.—This expression especially taught in sūtra VI.2.59, denotes a boy-king, i.e. a prince who was required under special circumstances to succeed to the throne as a

minor. It should be noted that a boy-king, although permitted to succeed in his minority, was formally consecrated as king only when he attained the age of majority.

PERSONAL AND PALACE STAFF.—The King, in keeping with his royal dignity, maintained a full contingent of personal and household staff which consisted of body-guards, the chamberlain, ecclesiastical staff, toilet attendants, and inferior servants who were in charge of royal paraphernalia. The Ashtādhyāyī acquaints us with each one of these classes of officers.

PERSONAI. BODY-GUARDS.—The king's A.D.C. or staff for the protection of his person (ātma-rakshitaka, Arth. II.21, p. 42) is mentioned by Pāṇini as Rāja-pratyenas (Shashṭhī pratyenasi, VI.2.60). Pratyenas is mentioned along with Ugra and Sūta-grāmaṇī in the Bṛihadāranyaka Up. (IV.3.43-44), denoting there a police-officer. 'The sense must be that of the humbler 'servants' of the king' (Vedic Index, II.34). It was a responsible task for which. Kauṭilya directs special precautions to be taken. Pāṇini informs us about the status of dignitaries appointed as king's body-guard. In sūtra VI.2.27 (Ādiḥ pratyenasi) he explains the formation kumāra-pratyenāḥ, i.e. a prince serving as an A.D.C. It must have been a position of honour to which princes of the royal blood were usually appointed. An assemblage of princes is mentioned as rājaputraka (IV.2.39).

CHAMBERLAIN.—This official is called Danvārika (VII.3. 4, Dvārādīnām cha; dvāre niyuktaḥ). His importance is indicated by his pay fixed at 24,000 silver kārshāpaṇas in the Arthaśāstra (dauvārika . . . sannidhātāraḥ chaturvimśati-sāha-srāḥ, V.3).

OFFICERS TO GREET THE KING.—These were: (1) Svāgatika, the officer who pronounced welcome to the king at his appearance (Svāgatādīnām cha, VII.3.7; svāgatam itvāha); (2) Sauvastika (svastītyāha, Dvārādi gaṇa, the officer who recites svasti-vāchana to the king). To this Kātyāyana

adds three more: (3) Saukha-śāyanika, the person who enquires of the king if he had slept well (sukhaśayanam prich-chhati). This is the same as Pāṇini's Saukha-śāyyika (sukha-śāyyayā jīvati, Vetanādi gaṇa, IV.4.12). In the Lohakum-bhī Jātaka we find mention of Brāhmaṇas coming at dawn to enquire about the health of the king of Kosala (aruṇāgamana-velayā Brāhmaṇā āgantvā rājānam sukhasayitam puchchhimsu, III.43). (4) Saukha-rātrika, the officer who asks whether the king spent a comfortable night. (5) Sausanātika, the officer who greets the king after his toilet (susnātam prichchhati). The sausnātika in relation to the king is referred to by Kālidāsa (Raghuvamša, VI.61).

TOILET ATTENDANTS-Both male and female attendants are mentioned in connection with king's toilet, e.g. parishechaka, snāpaka, utsādaka, udvartaka (Yājakādi gana, II.2. 9; VI.2.151); pralepikā, vilepikā, anulepikā shyādi gana, IV.4.48). The allowances (dharmya) paid to the latter were called after them prālepika, vailepika and ānule pika respectively. Patanjali makes a special reference to vailepika as a customary payment to a female attendant who applied unguents (VI.3.37; IH. 156). The expression snātānulipta shows that anulepa denoted unguents applied after bath (Arth., IV.6; p.217). The Kalpasūtra refers to these terms in describing the king's toilet (Kalpasūtra, S.B.E., pp. 242-3). RAJA-YUDHVA-That text also states that the king entered the hall for gymnastic exercises and there engaged in wrestling (mallayuddha). Pāṇini refers to rāja-yudhvā (III.2.95), a term applied to the wrestler who gives exercise to the king (rājānam yodhitavān iti rāja-yudhvā). This list of attendants incidentally has reference to the king's daily routine, as laid down in the Artha-śāstra.

### CH. VII, SECTION 2. GOVERNMENT

GOVERNMENT—The king was at the head of government in a monarchical or Ekarāja State. He was assisted in his work by a ministerial council or Parishad, and also possessed a larger body called Sabhā as we have already seen. The number of ministers comprising the Parishad is not known from Pāṇini, but, as Kauṭilya states, it must have depended on the needs of administration. The Chief Minister (Ārya-Brāhmaṇa), the Chief priest (Purohita), the Crown-Prince (Ārya-kumāra, same as Ārya-putra of the Minor Rock Edict at Brahmagiri), and the Commander of the Army (Senāpati) have received mention in the Asbṭādhyāyi, being important officers represented in the language through special terms.

ADMINISTRATIVE OFFICERS-Panini mentions government servants of several grades who appear to have been organized into a Civil Service. The term ayukta was a general term for government servants (II.3.40) engaged in routine work (āsevā). Kautilya refers to āyukta purushas of a king (Arth. I.15, p. 27), and so do the Jatakas (yuttakapurisa raño, Jat., V.14). When they were assigned special jobs they were called niyukta after their assignments (Tatra niyuktah, IV.4.69). As examples of niyukta officers, the Kāśikā mentions Koshthāgārika, store-keeper employed in the royal storehouses (Agārāntāt-than, IV.4.70), who according to Kautilya was of the grade of a superintendent. Other special officers whose names ended in agāra were Devāgārika for temples, and Bhāndāgarika for stores (Kāšikā on IV.4.70). These must have been officers known from olden times (cf. also Kautilya). Personal attendants, such as chhatradhara, bearer of the royal umbrella, tūnīdbāra, bearer of the quiver of arrows, and bhringaradhara, bearer of the king's spittoon, were of the niyukta class (Ani niyukte, VI.2.75).

The most important officers constituting the steel-frame of administration were the Adhyakshas mentioned in sūtra VI.2.67 (Vibhashādhyakshe). They were Heads of Government Departments. In Kauţilya's administrative system, the Adhyakshas play an important part as presiding over the different departments of administration. The Arthaśāstra enumerates about twenty-five Adhyakshas. As examples of Adhyakshas, the Kaśika cites Aśvādhyaksha and Gavādhyaksha (IV.4.69), mentioned also by Kauṭilya. The Kāśīkā refers to other niyukta officers, such as Ākarīka, those for mines; Śaulkaśālikā for customs, Āpaṇika for market-places, Gaulmika for forests, who were of the Adhyaksha cadre according to Kauṭilya.

YUKTA-The Yuktas were a class of subordinate officers of whom Panini mentions Yuktarohi (VI.2.81), which is the same as yuktārobaka of Kautilya (Artha. V.3. p. 248). His remuneration was fixed not as regular pay, but as an honorarium (būjā-vetana) of 500 to 1000 kārshāpanas per year. His duties are not exactly defined but he may have been entrusted with the special task of breaking ungovernable elephants and horses (avidheya-hastyasvārohana-samarthah, Ganapati Śāstri). The Samannaphala-sutta mentions battharoba and assaroba amongst skilled workmen of the times. Under the Adhyakshas was placed the entire civil service consisting of subordinate officers or Yuktas. They were a regular feature of the Mauryan administration referred to both in the Asokan Edicts (R.E.III) and the Arthasastra (II.5, sarvadhikaraneshu yuktopayukta-tatpurusbānām). Pānini's mention of both the Adbyakshas and Yuktas points to the fact that these officers had become parts of the administrative system a few centuries before Kautilya.

Păṇini mentions some other subordinate officers, e.g. gopâla, cowherds; tantipâla, goatherds; and yavapâla, guards of barley fields (Go-tanti-yavam pâle, VI.2.78). Tantipâla is mentioned also in the Virâțaparva (XI.8) having other pâla officers

working under him. The Pālas of Pāṇini (Pāle, VI.2.78) form a class of officers, of whom Kauṭilya mentions nadīpāla, dravya-pāla, vanapāla, nāgavanapāla, antapāla, durgapāla, and the Mahābbārata refers to sabhāpāla (Ādi., 222.16), in addition to gopāla and tantipāla, known also to Pāṇini. The Sasa Jātaka refers to khettapāla and Khettagopaka (Jāt., III.54) and the Sīhachamma Jātaka to khettarakkhakā, those watching barley and rice fields (II.110), which corresponds to Pāṇini's yava-pāla. Later we get vihārapāla, ārāmapāla and dhammapāla in the Buddhist tradition.

As specific instances of Yukta officers the Kāŝikā mentions go-saikbya and aśva-saikbya who acted as census officers of royal cattle and horses and whose business it was to register their number, age and branding marks. Details of such a census of royal cattle held in the kingdom of Duryodhana occur in the Ghoshayātrāparva (Vanaparva, chs. 239-40).

Kshetrakara, an officer for surveying fields, and lipikara, a scribe (III.2.21, with the variant form libikara, were both subordinate officials known in the Mauryan administration also.

DUTA-The Dula or emissary was named after the name of the country to which he was deputed (Tad-gachchhati pathidutayoh, IV.3.85). The term pratishkasha also denoted a messenger (VI.1.152). Couriers were called jangbārika. kara (III.2.21), corresponding to Kautilya (Arth. II.1, p. 46). Pāṇini refers to a special term yaujanika, to denote a courier travelling one yojana (yojanam gachchhati, V.1.74), to which Kātyāyana adds yaujanašatika, i.e. a courier who is deputed on an errand of a hundred yojanas. This is in complete agreement with Kautilya who refers to the speed of Mauryan courier service in terms of the distances they travelled from one yojana to a hundred yojanas. The remuneration prescribed was ten panas for each vojana travelled up to 10 yojanas, and thereafter twice as much in a rising scale from eleven to one hundred yojanas (Arth., V.3, p. 248). A similar courier service was maintained in Achaemenian Iran, under king Xerxes and other emperors almost contemporaneous with Pānini's time.

The message delivered orally by a dūta was called vāchika (Vācho vyāhrītārthāyām, V.4.35), and the action taken on it kārmaņa (Tad-yuktāt karmano'n, V.4.36; vāchikam śrutvā tathaiva yat-karma kriyate, Kāšikā). Pānini refers to an officer called kartri-kara (III.2.21), an obscure word unrecorded in literature, but in Pali kartā denoted the king's agent or messenger (Stede, Pali Dict., Jat., VI.259, etc.), whence the person who selected or appointed him must have been so called. ĀKRANDA—Pānini mentions special couriers called ākrandika (IV.4.38), deputed to an akranda (akrandam dhavati). The Kāšikā takes it as a place of moaning or suffering (ārtāyana) which does not make sense. Kautilya defines ākranda as a friendly king in the rear of the vijigīshu (Arth. II.62, p. 31.) Kullūka on Manu VII.207 explains the word clearly saying that a hostile king in the rear was called parsbnigraba and a friendly king in the rear who would act as a countercheck to the enemy at the back was known as akranda (Santi, 69.19). Thus a messenger deputed to an akranda king was called akrandika.

One who considered himself strong enough to proceed against an enemy, because of his secure position in the political Mandala, was called abhyamitrīya or abhyamitrīna (abhyamitram alangāmī, V.2.17).

IDEALS OF ADMINISTRATION—The ideal of the State was good government (saurājya). Good government means state under a king (rājā), after whom it was called rājanvān (Rājanvān saurājye, VIII.2.14). This points to the theory advocated both in Kautilya and in the Jātakas, according to which the institution of kingship emerged out of the people's desire to escape from the miseries attendant on 'no government' (the state of mātsya-nyāya). The people decided to elect a king, and thus making themselves rājanvān they realised the condition of peaceful society. The evils of kingless society

arājaka rāshṭra are described in the epics (cf. Ayodhyākāṇḍa, ch. 67; Śāntiparva, ch. 68).

FUNCTIONS OF GOVERNMENT—The successful working of government in a monarchy depends on the qualities and personal character of the king and his ministers. Training of the king in disciplined life was termed Vainayika (V.4.34). This is exactly the term used by Kautilya who deals with the training of princes in the chapter called Vinayādhikārika. He considers Vinaya as the foundation of successful governance.

The Vinayadi gana includes important terms relating to a variety of governmental functions of which the following may be noted: (1) Sāmayika, that which appertains to Samayas or established contractual relationships; (2) Sāmayāchārika, the subject of customary law or usage—the term forms the subject of a Section in the Arthasastra (Book V. Sec. 5)and as stated by Apastamba was the basis of dharma (Athatah sāmayāchārikān dharmān vyākhyāsyāmah, Hindu Polity, II. 106); (3) Aupayika, everything concerning ways and means (Arth. II.10, p. 74); Vyāvabārika, transaction of law; (4) Atyayika urgent business, mentioned both by Kautilya (I.15, p. 29) and Aśoka (R.E.VI) as already seen, which required immediate attention of the king and his ministers; (5) Samutkarshika, problems of development; (6) Sampradanika, affairs relating to royal charities; (7) Anpachārika, State ceremonial; (8) Sāmācharika, the business of correct procedure. Obviously the author of the Gana-patha is here in touch with living tradition borrowing these terms from actual administration.

MISCELLANEOUS DETAILS—We have already noticed the maintenance of a Civil List with respect to the allowances of the king's household, ministerial staff, and other government servants. Pāṇini, according to the requirements of grammar, mentions only a few names, e.g., the Chief Queen, mother of princes and some of their personal attendants (IV.4.48), but that should be taken as part of a regular system which is elaborated in the Arthaiāstra. Salaried staff is termed by

Pānini as vaitanika (IV.4.12). We learn from the Mahābhārata that salary was disbursed on a monthly basis (Sabhāparva, 61.22). Patañjali also refers to bhritaka masa, or month as the unit of time for payment of wages (II.275), and bbrityabharaniya or wages of employees (Bhāshya, I.370). The term karmanya (V.1.100) indicated efficiency arising out of adequately remunerated work, as noted by Kautilya (etāvatā karmanyā bhavanti, Arth. V.3, p. 247). Bribery is referred to (V.1.47); e.g. work for which a sum of rupees five was paid as bribe (upadā) was called pañchaka. The Kāśikā mentions the amounts of such bribes running up to a hundred or a thousand rupees. Reference is also made to the fabrication of accounts, avastāra (III.3.120), a term also known to the Arthasastra with reference to corruption prevailing in government offices (Arth., II.8, p. 65) which resulted in the embezzlement of government money (kośa-kshaya).

Secret means employed in the espionage office were called upanishat, a pejorative sense of the riginal word Upanishad which denoted occult or mystic doctrine (1.4.79). Kautilya uses Aupanishadikam in the same sense (Artha., XV). The adoption of such third degree methods was termed upanishat-kritya. The Gaṇa-pāṭha (IV.4.12) also mentions aupanishadika, a spy making his living by secret means called upanishad (upanishadā jīvati). In this connection attention may be drawn to the term vishya, which according to Pāṇini denoted a person marked out for administering poison (visheṇa vadhyaḥ, IV.4.91). This refers to the nefarious practice of rasadāḥ, who formed a branch of the secret service, (Artha., I.12, p. 21; V.3, 248).

SOURCES OF REVENUE—Pāṇini makes a general reference to sources of revenue as āya-sthāna; the object of the sūtra is to teach that the name of the revenue is derived from the name of the source producing that income (Thagāyasthānebhyah, IV.3.75). It appears that in the account registers maintained for revenue receipts income was entered according to its source.

For example, Patañjali mentions saulkika, revenue derived from toll-taxes, cf. śaulkaśālika in Kāšikā); gaulmika, forest plantations; āpaņika, market-places (IV.2.104.13; II.295); to which the Kāšikā adds ākarika, income from mines. Pāṇini himself refers to the payment of imposts called śulka, (V.1.47). Toll-tax was described in terms of its amount, e.g. pañchaka, goods on which a toll of rupees five was paid (tad asmin śulkaḥ dīyate, V.1.47).

Specific mention is made of saundika, or income derived from excise (Sundikādibhyo'n, IV.3.76). Kautilya states that the excise department was maintained as a State monopoly. Special regulations are given there to control the revenue from drinking booths. Sundika was the name of distilling plant, so called from the elongated condenser tube (sundikā) attached to the pot. Several specimens of them have been found at Takshaśilā from Kushāṇa levels.

In the Śundikādi gaņa we find reference to other heads of income, as platforms (sthandila), probably let out in market-places, wells (udapāna), stone quarries (upala), ferries (tīrtha), land (bhūmi), grasses (trina) and dry leaves (parna), the last two items indicating to what limits the sources of revenue were exploited. Even now, contracts in respect of forest produce are given by government for collection of leaves, weeds and grasses.

SPECIAL TAXES IN EASTERN INDIA—There is a provision in sūtra VI.3.10 to regulate the names of certain special taxes in the eastern parts of India (Kāranāmni cha Prāchām halādau). Four examples are given by the Kāśikā: (1) Sūpeśāṇaḥ, a levy of one śāṇa coin (this coin is known from two sūtras of Pāṇini and was equal to one-eighth of a Śatamāna) realised per kitchen or household; (2) Mukuṭe-kārshāpaṇam, one kārshāpaṇa coin per capita (mukuṭa); (3) Dṛishadimāshakaḥ, one māshaka coin collected from each hand-mill in a family; (4) Hale-dvipādikā and Hale-tripadikā, an imposit of two or three pāda coins on each bala or plough-measure

of land. These appear to have been customary levies imposed by the king on special occasions to meet emergent expenditure. Some of these taxes in modern terms are pāg (per head), tāg (per adult or poll-tax), hār (per plough), etc. It may be noted that Pāṇini does not name them by the usual word kara for 'tax', but they were known by the more emphatic word kāra. Pāṇini mentions a special class of officers named Kāra-kara (III.2.21), who, it appears, were entrusted with the raising of these taxes.

ACCOUNTING—Ganaņa was the term used for accounting, and vigaņana for discharge of accounts (I.3.36). The Superintendent of accounts (gāṇanika) and the clerks (kārmika) are mentioned by Kauţilya in connection with the annual audit by the Accounts Office (Arth. II.7, p. 64). In the Ashṭādhyāyī these two officers are mentioned in the Gaṇa-pāṭha, kāraṇika in IV.2.116 and kārmika in V.2.116. Falsification of accounts was called avastāra (III.3.120). The Kāśikā reveals the importance of the Heads of the Accounts Office (gaṇakas) when it refers to them as controlling all other officers from their desks in the accounts office (Tishṭhantonuśāsati gaṇakāḥ, III.2.126).

## CH. VII, SECTION 3. LAW AND JUSTICE

DHARMA AND NYĀYA-The word Dharma in Pānini has a two-fold meaning, firstly an act of religious merit, e.g. one who performs dharma is called dhārmika (IV.4.41); secondly it means custom or usage as in sūtra IV.4.92, according to which an act which does not deviate from dharma or usage is called dharmya (dharmād-anapeta). Pānini refers to payments fixed by long usage as dbarmya (IV.4.47; VI.2.65). This second meaning of dharma crystallised in the earliest law, of which the oldest compilations were known as Dharmasūtras. Apastamba commences his work with the statement: Athātah samayāchārikān Dharmān vyākhyāsyāmah (Āpas., Dh. S., I.1.1), 'We shall now propound Dharmas or laws based on custom'. Dharma as a subject of study had been developed under the Vedic Charanas from before the time of Panini, who refers to this subject in the sutra Charanebbyo Dharmavat (IV.2.46), showing that the Vedic schools possessed distinctive texts dealing with Dharma, which were none else than the Dharmasūlras. Kātyāyana explains it (IV.3.120.11) by saying that a Charana had two-fold texts: (1) Amnaya or sacred tradition compiled as religious canon, and (2) Dharma or customary law compiled from actual life.

Păṇini takes Nyāya as abbresha, non-deviation from traditional practice (III.3.37). An action in accordance with custom or usage was called nyāyya (IV.4.92), which was analogous to dharmya.

COURT—Matters concerning Civil Law were termed Vyāvabārika (V.4.34, Vinayādi gaṇa). Dharma-pati, master of law, also occurs in a gaṇa (IV.1.84). The arbitrator chosen by the parties to a dispute was called stheya (I.3.23, vivādapadanirņetā Kāšikā). The plaintiff or complainant was known as parivādī (III.2.142) or parivādaka (III.2.146). A witness was sākshī, whom Pāṇini defines as one who is an 'eye-witness' (Sākshād drashṭari saṃjñāyām, V.2.91). Later on those who possessed hearsay evidence were also called sākshī (Samaksha-daršanāt sākshī; śravaṇād-vā, Vishṇudharmottara, VIII.13). According to the sūtra Svāmīśvara, etc. (II.3.39) a witness was named according to the transaction or object in connection with which he was an eye-witness, e.g. a witness in relation to cows was called go-sākshī, and his evidence would be of use only on that particular point in the complaint.

The practice of administering oaths to witnesses was also known. Sūtra V.4.66, Satyād-aśapathe, prescribes a two-fold linguistic formation from the word satya: (1) satyā-karoti was used in connection with the payment of earnest money to settle a bargain; (2) satyain karoti was used in connection with the taking of oath. Manu informs us that this form of oath was reserved for witnesses of the Brāhmaṇa caste (satyena śāpayed vipram, VIII.113). For example, it was enough for a Brāhmaṇa to declare solemnly: 'I shall state the truth', and then to proceed with his evidence. The form of the oath for other castes was different and of a more materialistic nature. This nice distinction known to Pāṇini must have been developed in the Dharmasūtras, whence the tradition came down to the Smṛitis.

A surety was called pratibbū in relation to the loan for which he was bound as surety (II.3.39; III.2.179).

CIVIL LAW—Of the various items of Vyavahāra, only inheritance is referred to in the sūtras. One who inherits is called dāyāda, and the property which he inherits dāyādya (Dāyādyain dāyāde VI.2.5). The dāyāda was designated according to the object in which he had beneficiary interest, e.g. if of several claimants one had an interest in cows, he alone was called go-dāyāda (II.3.39).

A co-sharer is referred to as amsaka, i.e., entitled to a share in the property (Amsam hari, V.2.69; cf. Manu, IX., 150-53

for division of amsas). The force of the suffix in the word bārin (āvasyake ninih) would make amsaka an heir with legal sanction. Both dāyāda and amsa are technical terms known to the Dharmasūtras (cf. Vasishtha Dh.S., 17. 25; 17. 48, 49, 51, 52).

CRIMINAL LAW—Crime was called sāhasikya (I.3.32). Various forms of crime are referred to, e.g. theft (steya, V.1. 125), robbery (lunṭāka, III.2.155) and way-laying (paripantham cha tishṭhati, IV.4.36). The word aikāgārika means a thief, who waits for an opportunity to enter a house when lonely. Buddhist texts use the term in a different sense, i.e., a monk who begged his food from one house only. In the Majjhima Nikāya Gautama describes himself as an ekāgārika, dvyāgārika and saptāgārika (Mahāsīhanāda Suttanta).

Various forms of the use of defamatory language and of expressing censure are given.

Punishment both by way of fines and physical torture is mentioned. The former was called danda, as in sūtra V.4.2 which regulates the expression for indicating the amount of fine, e.g. a fine of two pāda coins was mentioned as dvipadikām danditah; similarly dvišatikām danditah, a fine of 200 kārshāpanas. An accused adjudged for punishment was called dandya (V.1.66, dandam arhati; cf. Yaska, II.2 referring to one fit for clubbing and called musalya). Mutilation of limbs was called chheda, and the criminal so punished chhaidika (V.1.64). Capital punishment was šīrsha-chchheda (V.1.65). Heinous crimes as infanticide and murder (kumāra-ghāta, śīrsha-ghāta, III.2.51) are mentioned; so also destroying an embryo (bhraunahatya, VI.4.174), and killing a Brāhmaņa (Brahmahā, III.2.87). Kautilya was in favour of stern administration of criminal justice and mentions uchebbeda or death (II.13, p. 87) and chheda or mutilation of limbs as punishments for serious crimes (Artha., IV.11, p. 229).

#### CH. VII, SECTION 4. ARMY

FOUR-FOLD DIVISION-The organisation of the army as known to Pānini was based on the traditional four-fold division, viz. infantry, chariots, horses and elephants. These were known as senānga, or limbs of the army (II.4.2; cf. bastyārobāb rathinah sādinascha padātayascha, Udyogaparva, 30.25). There is a grammatical rule saying that the names of armydivisions when compounded take singular number, e.g., a combination of charioteers and horsemen was called rathikaśvāroham; and of the former and foot-soldiers as rathikapādātam. The compounds must have had their origin from the prescribed grouping of these different units for the purpose of military operations. An infantry division was called padāti (VI.3.52). Special mention is made of the infantry units organised in the Salva country (IV.2.135). As against the padāti soldiers or footmen were the mounted ones called sādi (VI.2.41; cf. sādi-padāti-yūnām, Bhīshmaparva, 60.20). Pānini makes special mention of dromedary riders or camel corps (ushtra-sādi, VI.2.40). Mule and camel corps together are referred to as ushtra-vāmi (VI.2.40). Army was sometimes named in terms of caste, e.g., Brāhmana-senā, a Brāhmana battalion (Kāśīkā on II.4.25).

A big army required, besides its fighting services, a hierarchy of civil officers to manage its organisation, e.g. clerks, accountants and men in charge of supply. The accountants in charge of infantry and chariots are named as pattigaṇaka and ratha-gaṇaka with a special suffix to denote their functions in connection with military accounts (V.1.129, Udgātrādi gaṇa). Pṛitanā is obviously mentioned as a Vedic word in pṛitanāshāṭ (VIII.3.109).

FIGHTING SERVICES-The army to be effective must be

properly manned and officered. A cavalry commander was called asvapati (IV.1.84). The commander of the army as a whole was senāpati, whose rank according to Kautilya was one of the highest in the realm mentioned along with the chiefminister and the crown-prince in the civil list. An ordinary soldier who served in the army was known as sainika or sainya (IV.4.45). A soldier with a marching army or bound for field operations was distinguished as senāchara (III.2.17). The principle underlying the nomenclature of the various classes of fighting forces was the same as found at present in such words as musketeers, lancers, riflemen, etc. Pānini says that the fighter is named after the weapon which he wields (Praharanam, IV.4.57), e.g. āsika (swordsman), prāsaka (lancer), dbānushka (bowman). He makes special reference to those fighting with a battle-axe (pārasvadhika, IV.4.58), and spear (śāktīka, IV.4.59). Patanjali says that in forming the names of armed persons no suffix is necessary, for example kunta would denote both a lance and a lancer (cf. kuntan pravesaya, II.218). Amazonian soldiers also seem to be known, as śāktīkī, yāshtīkī, mentioned by Patañiali (II.209), but since neither Pāṇini nor Kātyāyana makes provision for the addition of a female suffix after ikak, it is doubtful if the institution of women warriors was known before the Mauryan period. Kautilya mentions them in connection with the emperor's palace-guards (stri-ganair-dhanvibhih, Arth. I.20, p. 12), and it is possible that it was an innovation of Chandragupta. Special mention is made of contingents of armoured soldiers organised as kāvachika units (kavachinām samūbah, IV.2.41). Kavachabara, 'one who wears the coat of mail', was a term denoting the age at which a youth was admitted to arms (III.2.10). The armour seems to have become a part of regular military uniform for which a special root (sainvarmayati, III.1.25, dons the armour) had come into use.

PARISKANDA—According to Pāṇini the word was pronounced as pariskanda in the Prāchya-Bharata region (Kuru-

Pañchāla), and parishkanda elsewhere (VIII.3.75). The word occurs in the Vrātya hymn of the Atharvaveda (XV.2.6, et. seq.) denoting in the dual, the two footmen running beside a chariot (Vedic Index, I.497). The Mahābhārata also refers to footmen protecting the wheels of a chariot on either side (rathānām chakra-rakshāścha, Bhishmaparva, 18.16). The Greeks also found them as forming part of the full equipment of a chariot in the Indian army in the fourth century B.C. It is said of war-chariots that each of them 'was drawn by four horses and carried six men, of whom two were shield-bearers, two archers posted on each side of the chariot, and the other two, charioteers, as well as men-at-arms, for when the fighting was at close-quarters they dropped the reins and hurled dart after dart against the enemy.' (McCrindle, Alexander's Invasion, p. 260). The two shield-bearers correspond to the two footmen running by the side of the wheels, and called chakra-raksha or pariskanda,

ARMS-The general term for weapons is praharana (IV.4. 57), also mentioned in the Arthasastra. Of names of weapons mention is made of bow (dhanush, III.2.21), spear (śakti, IV.4.59), battle-axe (paraśvadba, IV.4.58), long and short lances (kāsū and kāsūtarī, V.3.90; brasvā kāsūh kāsūtarī; kāsūriti šaktirāyudhavishesa uchyate, Kāśikā) a special kind of missile called beti (III.3.97), and sword (asi; also called kauksbeyaka from its scabbard or kuksbi, IV.2.96). Short lances were effectively used in ancient cavalry units of the Scythians and Parthians both on their advancing and retreating tactics. In the army led by Xerxes against Hellas, the Gandharians are described by Herodotus as bearing short spears, which seem to have been kāsūtarī (Raychaudhury, Polit. Hist., 1950, p. 242). A bow was also called kārmuka, which Pānini derives from karman or action in the field (V. 1.103). Sayana derives it from krimuka, name of a tree (Satapatha, VI.6.2.11). According to Kautilya a kārmuka bow was made of the wood of tāla or palmyra tree (Arth., II.10,

p. 102). This agrees with Pāṇini who also refers to a bow made of tāla, and itself called tāla (Tālād dhanushi, IV.3.152, tālain dhanuh; also mentioned in the Mahābhārata tālamayain dhanuh). Pāṇini mentions a specially big kind of bow called maheshvāsa (VI.2.38). According to Kauṭilya a bow was equal to five cubits or seven and a half feet (Arth., X.5, p. 372). This appears to have been the size of the big bows called maheshvāsa in Pāṇini and known much earlier. The Indian soldiers under Puru in the battle of the Vitastā are stated by the Greeks to have used long bows, one end of which rested on the ground and was held by the archer's foot, who shot with its string long and heavy arrows with such force as no breast-plate could withstand.

The arrows were fitted with barbs (patra) to make them strike with deadlier effect. Pāṇini refers to the use of barbed arrows (sapatra), causing extreme pain (Sapatra-nishpatrād ati-vyathane, V.4.61). This is confirmed by the account of Plutarch of the arrow with which Alexander was wounded in the fortress of the Malloi (Mālavas). He also gives the measurement of the barb: 'An archer let fly an arrow which transfixed his cuirass and pierced to the bones around his breast and there stuck fast, the shaft as it projected from the wound aggravating the pain (cf. Pāṇini's ativyathana), while the iron of the barb measured four fingers in breadth and five in length'. (McCrindle, Alexander, 1901, p. 207).

ART OF WAR—The Ayudhajīvīns were warrior tribes organised on a military basis into Sanghas, occupying mostly Vāhīka or the Panjab. Their members were known as āyudhīya, 'making a living by the profession of arms' (Āyudhena jīvati, IV.4.14). We know that these soldiers put up the stoutest resistance against the Greeks in the fourth century B.C. The Aśvakāyanas of Maśakāvatī and the Mālavas, all āyudhajīvins, constituted the finest soldiery, which extorted the admiration of the foreigners. The Kshudrakas and the Mālavas (Gaṇa-pāṭha of IV.2.45), we are informed by Kātyā-

yana, pooled their military strength in a confederate army called the Kshaudraka-Mālavī Senā. The foot-soldiers (padāti) of the Sālva country have been especially noted (IV.2.135).

Pănini also refers to military sports or tournaments (braharana-krīdā, IV.2.57), in which young men participated for display of archery and swordsmanship. Pānini states that the names of battles were derived from a two-fold factor, viz. the names of combatants (yoddbri) and the objective (prayojana) for which they fought (IV.2.56). The Kāśikā cites āhimāla, a battle fought by the Ahimāla soldiers (ahimālā yoddhäro'sya saingrāmasya); syāndanāsva, fight by contingents of chariots and horses; Saubhadra and Gaurimitra, a battle for the sake of Subhadra and Gaurimitra. Attacking with an army was termed abhishenayati (III.1.25; VIII.3.65); encircling parishenayati; and retreating pradrāva (III.3.27). ANUŚATIKA-Pānini refers to Anuŝatika (VII.3.20), who was an officer of the Commissariat, according to the Sukranīti. He was an assistant of the Satānīka, or commandant of 100 soldiers. 5 footmen were placed under a Pattipāla, 30 under a Gaulmika, and 100 under a Satānīka (Sukra, II.140). The Anusatika looked to army stores and recruitment.1

तयाविषोऽनुशतिकः शतानीकस्य साधकः । जानाति युद्धसंभारं कार्ययोग्यञ्च सैनिकम् ।। शुक्रनीति २।१४४

# CH. VII, PART 2. REPUBLICS IN PANINI SECTION 5. POLITICAL SANGHA OR GANA

JANAPADA AND JANAPADINS-The country divided into Janapadas demarcated from one another by boundaries (Janapada-tadavad byoścha, IV.2.124). In Panini Janapada stands for country, and Janapadin for its citizens. The derivative meaning of the term Janapada points to the early stage of land-taking by the Jana for a settled way of life. This process of the first settlement on land had completed its final stage prior to the time of Pānini. The Ianapadas which were originally named after the peoples settled in them, dropped their tribal significance and figured as territorial units or regions. Pānini testifies to this process (Sūtrakānda, I.2.51-57) by stating that the names of the Janapadas did not take after their original settlers, but were then current as independent proper names for territorial units. He even goes to the extent of arguing that if the derivative meaning of such geographical names as Pañchāla was insisted upon, there might be cases in which with the disappearance of the derivative cause, the name of the country itself formed on that basis should disappear (Lub-yogā prakhyānāt, I.2.54; Yoga-pramāne cha tadabhāve' darśanam syāt, I.2.55). This appears to be only a rational attempt to meet the views of extreme etymologists; it does not mean that in Pānini's time the essential relationship between the Janapadas and the Janapadin rulers had in any way weakened. We find that Pāṇini later on makes that relationship a real basis for his sūtras. For example, the sūtra, Janapade lup (IV.2.81) alludes to the name of a Janapada derived from its inhabitants but without any extra affix. Moreover, we find from Pānini's own statement that in the majority of the ancient Janapadas their original Kshatriya settlers still held sway and the political power was concentrated in their hands.

In this connection sūtra IV.1.168, Janapada-śabdāt kshatriyad-an, is important. Grammatically it teaches that the affix an comes in the sense of a descendant after a word which is both the name of a country and a Kshatriya tribe. Here the identity of the Janapadas and the powerful Kshatriya clans settled there is repeated. These ruling Kshatriyas inhabiting the Janapadas were, as we are informed by Kātyāyana, governed by two-fold constitutions; some were monarchies and others were Saiighas or republics (kshatriyad-ekarjat sangha-pratishedhartham, IV.1.168.1). As monarchical states, Pāṇini mentions the following: Sālveya, Gāndhāri, Magadha, Kalinga, Sūramasa, Kosala, Ajāda, Kuru, Sālva, Pratyagratha, Kālakūta, Asmaka, Kamboja, Avanti and Kunti. Besides these names included in the sūtras, there might be others which were implied in Pāṇini's rules, of which Patañjali mentions Videha, Pañchāla, Anga, Dārva, Nīpa, Sauvīra and Ambashtha, the latter two being mentioned in the Ashtadbyāyī in a different context. The kings who ruled over these Janapadas were Kshatriyas, and the same word denoted both a descendant of the Kshatriyas, i.e., a citizen and their king (Kshatriya-samāna-śabdāt janapadāt tasya rājanyapatyavat, IV.1.168.3). For example, Pāńchāla was the name of a Kshatriya descendent of the Panchala tribe and also of the king of that Janapada. Similarly, Panchālāh in the plural was the name of the country as well as the name of the Kshatriya clan. Although a Janapada consisted of other castes also besides the ruling Kshatriya caste, still the political sovereignty was in the hands of the dominant Kshatriya clan who had founded that Janapada. This was a fact so patently recognized that Katyayana questions the advisability of including the word Kshatriva in sūtra IV.1.168. His point is that only the descendants of the ruling Kshatriya tribe were designated by the apatya-denoting suffix added after the name of a Janapada (Kshatriya-grahanānarthakye choktam, IV.1.168.2). Patañjali definitely states that such words as Kshaudrakya and Mālavya denoted only a member of the Kshatriya caste, and not other sections of the population, such as the labourers or slaves living there (II.269). No doubt, there were Brāhmaṇas and other castes also inhabiting these Janapadas, but the political power was centred in the hands of the Kshatriyas, and only in exceptional cases of any other caste.

SANGHA-We have seen above that Katyayana takes Sangha as a form of government distinct from Ekarāja, where sovereignty vested in one (ekādbīna), and not in the many as in the Sangha (ganādhīna). This meaning is also borne out by the rules of Pāṇini. Pāṇini speaks of Sangha as a generic term, applied to the following. Firstly, Sangha means 'a multitude', as in the expression grāmya-paśu-sangha, a herd of domestic cattle. In the same sense it is also applied to a multitude of human beings. Secondly, a Saigha was a term for a Nikāya, which is defined by Pāṇini as a corporate body where the distinction of upper and lower does not exist (Sanghe chanauttaradharye, III.3.42). This applied to a religious Sangha functioning as a fraternity without distinctions of high (uttara) and low (adhara). Thirdly, there is the sūtra, Saingh-odghau gana-prašainsayoh (III.3.86), which speaks of the political Sangha technically known as Gana. Sangha and Gana were used as synonymous words for a republic. Pānini speaks of the Yaudheyas as a Saigha, whereas they refer to themselves as a Gana on their coins, albeit in the post-Pāṇinian period.

THE RELIGIOUS SANGHA—Pāṇini mentions the religious Sangha as Nikāya, as we have seen. The religious Sangha was a perfect copy of the political model except in one important respect. We shall presently see that in the Kshatriya tribes organised as Sanghas, the political power vested in the hands of those families which were eligible for regular coronation (abhisheka-mangala) and consecrated to rulership

by that ceremony (abhishikta-vamisyas). Other castes in the Gana did not share the political power, although they owed allegiance to the Janapada and the Janapadins (IV.3.100). This distinction between castes did not obtain in the sphere of religious Sangha based on equality. In fact, the different orders in the religious Sangha or Church were known as Nikāyas, of which the Buddhist Sangha in course of time developed eighteen. Not only Buddha, but other religious teachers who were his contemporaries, e.g. Purāṇa Kassapa, Makkhali Gosāla, and others have been called Sanghino, heads of Sanghas, Ganino, heads of Ganas and Ganāchāriyo, teachers of Ganas. The Sangha spirit in Pāṇini's time had influenced every sphere of public life, political, economic, religious, social and educational. Like the political Sanghas, even Gotras and Charanas had their anka and lakshana.

### CH. VII, SECTION 6. GANA POLITY

RAIANYA AS THE RULING CASTE IN A GANA-The term Rājanya denoted the Kshatriya descendants of a rājā, whereas the others were called rajana (IV.1.137. For example, in the Andhaka-Vrishni Saiigha, only some members bore the title rājanya, as the descendants of Śvāphalaka, Chaitraka, Śini and Vāsudeva, whereas others like the Dvaipyas (inhabitants of the islands near the sea-coast) and Haimayanas did not have that status although they too belonged to that Sangha (VI.2.34; Andbaka-Vrishnayah ete na tu rājanyāh). The Kāśikā defines rājanya as abbishikta-vainšya Kshatriyas, i.e., leaders of families consecrated to rulership. It appears from this that not all the members of a Sanigha were entitled to exercise political power, which was the privilege of only the governing class. It appears that the descendants of the pioneer Kshatriyas who had settled on land and founded the Janapada state, treated political sovereignty as their privilege which was transmitted in their families from generation to generation. In spite of the growth of population in a Janapada, the centre of power was not altered and the main authority continued to vest in Kshatriya hands. These Kshatriyas in a Sangha bore the title rajā which was applied to the head of each family who represented his kula in the Sangha assembly. The constitutional practice in the Sabhāparva (grihele grihe hi rājānah, 14.2) had reference to this feature of Sangha polity, the opposite of which was a Samrat government (samrāj-šabdo hi kritsnabbāk). Kautilya speaks of Sanghas as raja-śabd-opajīvinah (Arth., XI.1, p. 378), i.e., 'those whose members bore the title rājā. The Lichchhavis are said to have comprised 7,707 rājans living in Vesāli, and it is stated in the Lalita-vistara that each one of them thought: 'I am king, I am king,' (Ekaika eva manyate aham rājā ahamrajeti). Păņini mentions the Vrijis, of whose confederation the Lichchhavis formed part. There is a reference in the Jātakas to the Lichchhavi rulers consecrated to rulership by sprinkling sacred water on them (cf. Vesāli-nagare Gaṇa-rāja-kulānām abhiseka-mangala-pokkharanī, Jāt., IV.148). A similar custom prevailed amongst the abhishikta-vanisya rājanyas of the Andhaka-Vṛishṇis and other Sanghas, which justified their designation abhishikhta vanisya.

KULA—The phrase Gaṇa-rājakula used in connection with the Sangha of the Vṛijis shows that the political Sangha called Gaṇa was composed of various rājakulas or royal families and that the heads of these rājakulas constituted the governing body of that Gaṇa. This is confirmed by the Mahābhārata which says that the members of a Gaṇa were equals of one another in respect of birth and family (Jātyā cha sadṛišaḥ sarve kulena sadṛišas-tathā, Śāntiparva, 107.30). Kauṭilya also states that kula was the unit of a Sangha.

The kula basis of the tribes appears to be vitally connected with a number of Pāṇinian sūtras dealing with gotrāpatya and yuvan descendants. Apart from those names which were Rishi gotras Pāṇini also includes a number of tribal names in the lists dealt with in the Gotrapatya chapter. For example, in the very first sūtra (IV.1.98) Kunja and Bradhna were not names of Rishi gotras but of Vrātas, a class of rudimentary Sanghas of the Ayudhajīvī pattern (V.3.113). The need for distinguishing the gotra-descendant from the yuvan-descendants should be understood clearly. In fact in the social as well as the political sphere, the family was the unit of representation, which was exercised through the head of each family, called Kula-Vriddha (Santiparva, 107.27). In grammatical literature, Pāṇini refers to him as Vriddha, which was a pre-Pāṇinian term for Gotra (Vriddha-sabdah pürvāchārya-samjñā gotrasya, Kāśikā; also Patañjali, I.248 on sūtra I.2.68; Kātyāyana IV.1. 90.5). Pāṇini in his grammar substituted Vriddha mostly by Gotra, stating that all the descendants of an ancestor in a family except the son of the founder were called Gotra (Apatyam

pautra-prabhriti gotram, IV.1.162). During his life-time the eldest male member who represented the family was the Gotra and the junior members were called Yuvan. Pāṇini also uses a third term, viz. Vamsya, to designate him; this also appears to be a pre-Paninian samjñā incidentally retained (IV.1.163). Each individual was given his personal name and a Gotra name. The latter came in for special attention by the grammarians owing to its importance in social and political life. According to Pāṇini only one member in the family at a time was to retain the title Gotra, the rest were called Yuvan. This implies that only one person, usually the eldest male member, represented his Kula on all important occasions and functions.

The family basis of Gana polity preserved the hereditary character of its rulership vesting in the same families. The number and names of these families comprising the ruling class were carefully preserved as in the case of the Lichchhavis whose number is stated to be 7,707 in Pāli literature. In the capital of the Cheta state mention is made of 60,000 khattiyas all of whom were styled rājāno (Jāt., VI.511), and must have represented so many Kshatriya members constituting that State. The craze for constituting new republics had reached its climax in the Vābīka country and north-west India where clans consisting of as many as one hundred families only organized themselves as Ganas, as in the case of the hundred sons of Savitri establishing themselves as a Kshatriya clan under the name of Savitri-putras with the title raja applied to each one of them (Vanaparva, 297.58; Karnaparva, V.49; and Pănini în the Dāmanyādi group, V.3.116).

BHAKTI—Pāṇini takes bhakti to denote loyalty of the citizen to the State whether a kingdom or a republic, i.e. of the Jana-padins to their Janapada (sūtra IV.3.100, Janapadināni jana-padavat sarvam, etc.). The Kāšikā mentions, as examples of this kind of bhakti or civic loyalty, (1) Āngaka (Angāḥ jana-pado bhaktirasya), (2) Vāngaka, (3) Sauhmaka, (4) Paunḍ-pado bhaktirasya), (2) Vāngaka, (3) Sauhmaka, (4) Paunḍ-pado bhaktirasya), (3) Sauhmaka, (4) Paunḍ-pado bhaktirasya), (5) Nadaka (6) Nad

raka, (5) Madraka and (6) Vrijika.

We may also consider such terms as Sraughnah, Māthurah, one owning loyalty (bhakti) to the township of Srughna or Mathurā, as indicative of the civic devotion of a citizen to his city. Such formations as Prāchya-sapta-samah, 'a Prāchya for 7 years', Gāndhāri-sapta-samah, 'a Gāndhāri for 7 years' (Dvigau pramāne, VI.2.12, as explained by the Kāšikā) indicate citizenship acquired by domicile for stated periods.

PARTY SYSTEM-Panini refers to dvandva denoting two rival parties, and to vyutkramana denoting their rivalry for power (VIII.1.15). The Kāśikā explains it as the division of members into parties sitting separately in the House (dvivargasambandhena prithagavasthitā dvandvain vyutkrāntā ityuchyante, VIII.1.15). There were three terms to denote a partymember, viz. (1) vargya, (IV.3.54), (2) gribya, and (3) pakshya (III.1.119). Vagga as a technical term of the Sanigha vocabulary had the same Pāṇinian meaning and denoted a party, as shown by the Buddha's teaching (sukhā sanighassa sāmaggī . . .neva Bhikkave vaggena sanigha-kamman kātavyam (Mahāvagga). The Party was named after its Leader (Vargyādayaścha, VI.2.131), e.g. Vāsudeva-vargya, Vāsudeva-pakshya, Arjuna-vargya, Arjuna-pakshya. Division of members out of allegiance to their respective parties was termed vyāšraya (V.4. 48; nānā-paksha-samāšraya). This was indicated by a special linguistic formation, i.e. Devā Arjunato'bhavan, 'the Devas ranged themselves on the side of Arjuna' and Adityāh Karnato'bhavan, 'the Adityas ranged themselves on the side of Karna'. The existence of party-system in the working of the Ganas is especially mentioned in the case of the Andhaka-Vrishni Sangha (IV.2.34). Patanjali in commenting on Kātyāyana IV.2.104.11 mentions the party of Vasudeva and that of Akrūra.

EXECUTIVE—In sūtra V.1.58, Pāṇini refers to the numerical strength of a Sangha which Patañjali explains as consisting of five, ten, or twenty members (panchakah, dasakah, vimsakah sanghah, V.1.58 and 59). In sūtra V.1.60, he speaks of a varga

comprising five members called pañchad-varga or pañchakavarga, and of another varga comprising ten members and named dasad-varga or dasaka-varga (Pañchad-dasatau varge vã). This seems to refer to the Executive of a Sangha.

In the Antagadadasão, recounting the subjects ruled by Krishna Vāsudeva at Dvārāvatī, reference is made to the ten principal Dāśārhas headed by Samudravijaya (Samuddavijaya-pāmokhānam dasanham Dasārāṇam), and to five Mahāvīras with Baladeva as their leader (P. L. Vaidya's edition of Antagadadasão, p. 4). The Dāśārhas were a clan forming part of the Andhaka-Vrishni Sangha; a reference to ten of them with a Leader implies an Executive Body corresponding to the Dašaka Sangha of Patañjali on Pāṇini's rule. Similarly the reference to Baladeva and his four deputies constituting the Pañcha-Mahāvīras corresponds to the Inner Group called Pañchaka Sangha. The Mahāvagga (IX.4.1) also speaks of five kinds of Sanghas, namely, those which had a Varga of four, five, ten, twenty or more members.

The sūtra Panchad-dasatau varge vā (V.1.60) is of deeper significance. Varga here means quorum, or minimum number. It is stated in the Mahāvagga (V.13.2) that the Buddha vested the power of upasampada by means of a regular process, in the Sangha or the whole body of Bhikkhus; but in the outlying localities (bachantima janapadā IX.4.1), where the requisite number of monks was not available (Avanti-Dakkhināpatho appabbikkhuko boti), the quorum for initiation was to be ten (na una-dasa-vaggena upasampādetabbo, 1.31.2) and for other matters five (pañchavagga gana). This was permitting vagga-kammatā in place of sangha-kammata and interdicting the practice of duvagga and tivagga ganas. The Paninian terms panchad-varga and dasad-varga seem to have reference to such a contingency. VOTING-Vote is termed chhandas in the Ashtādhyāyī (IV. 4.93). Decisions reached as a result of voting (Chhandaso, nirmite) were called chhandasya (IV.4.93). We read in the Telapatta Jātaka that the ministers and the citizens of Takshaśilā decided to elect the Bodhisattva as their king with one vote (Atha sabbe amachchā cha nāgarā cha ekachchhandā hutvā, Jātaka, I.399).

QUORUM—The idea of quorum was known. Pāṇini refers to gaṇa-titha as the person whose attendance completes the Gaṇa (Gaṇasya pūraṇaḥ, V.2.52; similarly saṅghatithaḥ and pūgatithaḥ). The rule of quorum was strictly observed. The Mahāvagga refers to a gaṇa-pūraka who acted as the 'whip' to secure a complete quorum (III.3.6).

STATE EMBLEMS—Aika and Lakshaṇa. As mentioned in sũtra IV.3.127 (Sainghānka-lakshaṇashv-añ-yañ-iñām aṇ), a Saingha had its aika and lakshaṇa. The lakshaṇa denoted the heraldic symbols or marks of a Saingha which they employed on their coins, seals and banners, etc. Pāṇini himself refers to symbols marked on cattle as lakshaṇa. On the tribal coins we find a great variety of symbols and these represent the lakshaṇas of the Sainghas which issued them. The Mahābhārata takes aika as a synonym of lakshaṇa in describing the census (smāraṇa) of the royal cattle by branding them with proper marks (Vanaparva, 240.5). But in Pāṇini's sūtra, aika seems to stand for the legend adopted by the States, like Mālavānām jayaḥ or Yandheya-gaṇasya jayaḥ, as found on their coins. Lakshaṇa is the same as lānchhana or heraldic crest of later Sanskrit.

JAYA—In the sūtra, Jayaḥ karaṇam (VI.1.202) Pāṇini refers to jaya as a technical term implying an instrument of victory (jayanti teneti jayaḥ, Kāśikā), which was distinguished from the other word jaya denoting victory by an acute accent on its initial vowel. This term is found on many Gaṇa coins and must be interpreted in the new light received from Pāṇini's rule. For example, the formula Yaudheya-gaṇasya jayaḥ on the coins of the Yaudheya republic, proclaims the coin as the symbol of Yaudheya authority. The issuing of coins was an exclusive prerogative of their sovereignty over that territory.

## CH. VII, SECTION 7. AYUDHAJĪVĪ SANGHAS

ÄYUDHAJĪVĪ SANGHAS—Pāṇini refers to a number of Sanghas as āyudhajīvin (V.3.114-117), meaning those who lived by the profession of arms. In sūtra IV.4.14, Āyudhāch-chha cha, one who earns his living by means of arms (āyudhēna jīvati) is called āyudhīya or āyudhika. Kauṭilya refers to two kinds of janaḥadas, (1) āyudhīya-prāyāḥ (explained as āyudha-jīvi-Kshatriyādi-prachurāḥ), those mostly comprising soldiers, and (2) Śreṇi-prāyāḥ comprising guilds of craftsmen, traders and agriculturists. The former (and also his śastropajīvins) correspond to Pāṇini's āyudhajīvī Sanghas, which were the same as the yodhājīvas of Pali literature.

FOUR KINDS OF ĀYUDHAJĪVINS—Pāṇini classified his material of the āyudhajivin Saṅghas under several heads, viz. (1) Saṅghas in Vāhīka (V.3.114); (2) of Parvata (IV.3.91) or mountainous country; (3) Pūgas organised under their Grāmaṇī into some form of Saṅgha government (V.3.112); and lastly (4) Vrātas living by depradation and violence (V.3.113; V.2.21), and having only a semblance of Saṅgha. The most advanced āyudhajīvin Saṅghas belonged to the Vāhīka country (V.3.114), which comprised the region from the Indus to the Beas and the Sutlej (Karṇaparva, 44.7; Hindu Polity, 1.34). These were the Yaudheyas, Kshudrakas, Mālavas, etc.

MOUNTAINEERS—A very important group of martial Sainghas comprised those occupying Parvata or some mountainous region in the north-west. According to the true import of Pāṇini's rule, those whose ancestors once lived in the Parvata region continued to retain their original appellation of the ancestral homeland (abhijana), although for the time being they might have migrated elsewhere (Ayudhajīvibhya-

śchbah parvate, IV.3.91; so'syābbijana iti vartate, Kāśika). Evidently this Parvata region must have been outside the plains of the Vāhīka country, which brings us to the highlands of north-west as the home-land of the ayudhajivins. The Kāšikā mentions the Hrdgoliyas of Hridgola, probably Hi-lo of Yuan Chwang (modern Hidda south of Jalalabad); Andbakavartīyāh of Andhakavarta, perhaps Andkhui, a district in the northeast of Afghanistan (Imp. Gaz., Afghanistan, p. 80), and Robitagiri yas of Robitagiri, which last is important as reminiscent of Roha, old name of Afghanistan. All this portion of the country is up to the present day peopled by hardy and warlike mountaineers. The Markandeya Purana refers to mountain-dwellers (parvatāśrayinah) of the west, including such names as the Nihāras (Nigrahāra of Vāyu, same as Nagarahāra or Jalalabad where Hridgola or Hiddā is situated) and the Hamsamargas (modern Hunza in the north of Dardistan). Thus the country of the mountaineers extended from Kashmir to Afghanistan and most of the people settled in these mountains and their valleys were of the ayudhajivin class. The Bhīshmaparva especially mentions the Girigahvaras, dwellers of mountain caves, as a people of the north-west (Bhishmaparva, 9.68; cf. Pratichyāh Pārvatīyāh, Udyoga, 30,24), and this epithet appropriately applies to the tribes of the north-west. They were the same as the saighāh girichārinah and girigahvaravāsinah (Dronaparva, 93.48). Arrian mentions these mountainous Indians as fighting in the army of Darius against Alexander at Arbela (Anabasis, III, 8.3-6). It was these Parvatīya Ayudhajīvins that offered stout resistance to Alexander in Bactria and Gandhara. The approximate location of these Parvatiyas should be sought for in the region of the Hindukush on both sides of it. Roha, of medieval geographers, Rohitagiri of Pāṇini, the ten mandalas of Lohita (Sabhā, 24.16) and Rohitagirīyas of the Kāśikā, all together point to the mountainous regions of central and north-east Afghanistan as being the Parvata country, which name survives in Kohistan. We may

now form a clear conception of the geographical distribution of the three types of Sanghas in Pāṇini: (1) the Āyudhajīvins of Vāhīka from the Indus upto the Beas and the Sutlej, of whom a special group occupying the mountainous Kangra region was called Trigarta-Shashtha (V.3.116); (2) Pūgas, under the leadership of grāmaṇīs, settled on the right bank of the Indus (Sindhukūlāśritā grāmaṇīyāḥ, Sabhāparva, 32.9), corresponding in all probability to the present day "Tribal Area" to the west of the Indus; (3) Parvatīyas, or the Highlanders of Afghanistan and the Hindukush, who included also the tribes of Dardistan. These contained many living only in the Vrāta stage of existence. It is evident that the Sanghas in the innermost belt were the best organised of all and lived in a higher stage of civilization owing to Aryan contact and proximity and those in the outlying parts were much less civilised.

PŪGA AND VRĀTA—The Vāhīka land and the Parvata country were reeking with āyudhjīvin tribes governed by constitutions of different types. The highest form of government evolved amongst them was the Sangha. Under the Sangha polity also there were several stages of development. Some were only aristocratic oligarchies; others were of the Rājanya variety whose descendants are to be seen most likely in the Rāṇas of the Panjab Hill States; and still others were politically so well organised as to associate the whole Janapada with the sovereign right of issuing coins.

But besides Sangha there were other elementary forms of democratic institutions in existence amongst those āyudhajīvins, three of which as Śreni, Pūga and Vrāta are particularly noteworthy. The word Śreni possessed a political significance also as shown by the expression Kshatriya-śreni found in the Artha-śāstra for a class of Vārtā-śastropajīvins. The Mahābhārata also knows of Śreni as a political institution. It mentions Śrenis fighting on the side of Duryodhana (Śrenayo bahu-sāhasrāh saniśapatakaganāscha ye, Karnaparva, V.40). These must be corporations of fighting Kshatriyas. Pāṇini's sūtra

II.1.59, Śrenyādayaḥ kṛitādibhiḥ, shows the political development at work among the Āyudhajīvan peoples organising themselves into new Śrenis and Pūgas. Bands of āyudhjīvin warriors were coming under the general influence of political awakening and emerging into organised political life. The linguistic formation such as aśrenayaḥ śrenayaḥ kṛitāḥ Śrenikṛitāḥ points to these new political developments. Similarly Pūga-bhūtāḥ, (apūgāḥ pūgā bhūtāḥ, 'those who were not organised as pūga became so organised'), and Eka-bhūtāḥ, 'tribes organising themselves as one political unit under a common ruler' (ekādhīna) or king.

PŪGA—Pūga was less developed than a regular āyudhjīvī Saṅgha, but better organised than a Vrāta. The Kāṣikā makes Pūga a species of Saṅgha composed of members of different castes without any regular occupation, but probably of a peaceful character intent on earning money (nānā-jātīyā aniyata-vrittayo arthakāma-pradhānāh Saṅghāh Pūgāh, V.3.112). Pāṇini mentions Pūga along with Saṅgha and Gaṇa in connection with a quorum, the member whose presence imparted to the Pūga its completeness being mentioned as Pūgatitha (pūgasya pūraṇaḥ, V.2.52). This shows that the method of deliberation prevailing in the Pūga was similar to that in the well organised Saṅghas and Gaṇas.

Grāmaṇī Constitution of Pūgas. Sūtra V.3.112 is important as throwing light on the nature and constitution of Pūgas. It shows that Pūgas derived their names in two ways; some were named after their Leader or Grāmaṇī, and some from other circumstances (Pūgāññyo'grāmaṇī-pūrvāt, V.3.112). The Kāśikā mentions Lohadhvaja, Chātaka and Śibi as Pūgas whose names were not derived from those of their leaders. But Devadattaka and Yajñadattaka are given as typical names of Pūgas called after the name of their Grāmaṇī. Thus those who recognised Devadatta as their Grāmaṇī were called Devadattakāḥ. This fact is significant, as we know that the organisation of a corporate band of persons under one

leader is still the prevailing custom in the North-West. Many of the Pathan tribes or khels are named after their ancestral leaders corresponding to ancient Grāmiņīs. Isazai, Usufzai, both living on the banks of the Indus, are names of this type. The name of the Pūga as derived from its original Grāmaņī founder continued later on through generations.

The association of Pūga with Grāmanī in Pānini's sūtra points to their definite geographical area. We are told in the Mahābhārata that the warlike Grāmanīyas, i.e. clans named after their gramanis, lived on the banks of the Indus and they fought against Nakula in his western campaign (Sindhukūlāśritā ye cha Grāmanīyā mahābalāh, Sabhāparva, 32.9). We may thus locate the Puga type of Sanghas organised under Grāmanī leaders in the tribal area to the west of the Indus. Pānini names some of these war-like tribes of the North-West Frontier, e.g. Aśani (Parśvādi group, V.3.117) perhaps, Shinwaris with their parent-stock of the Karshbuns, to be identified with Kārshāpanas in the same gana; the Aprītas or Aparītas (IV.2.53), same as Greek Aparytai, (Camb. Hist., p. 339), modern Afridis. The Pathans are an ancient people, settled in their original homeland, the country of Vedic Pakthas, or Pakteys (country Paktyike) mentioned as being in the northwest of India by Herodotus (Ved. Ind., I. 464), from which Pakhtun is derived. Several ancient Sanskrit names in the ganas correspond to names of these clans, e.g., the Pavindas (Aśvādi gana, IV.1.110) corresponding to modern Powindas settled in the Gomal valley, armed tribesmen formerly occupying the Wana plain (N.W.F.P. Gaz., p. 253), and the Vanavyas (Nadādi group, IV.1.99; people of the Vanāyu country), corresponding to the people of the wide open Wana Valley in the north of Gomal river.

These clans (Pūgas) are still governed by their Council of Elders, which according to the Frontier Crimes Regulation has a determining voice in the adjudication of criminal cases, and which represents survivals of the old form of Saigha

government which obtained amongst them.

Kumāra-Pūgas. In sūtra VI.2.28 there is a reference to Youth Organisations of these Pūgas, with the prefix kumāra added to their names, e.g., Kumāra-Chātakāh, Kumāra-Lohadhvajāh, Kumāra-Balāhakāh, Kumāra-Jīmūtāh (Kāšikā). These must have been organised under the auspices of their parent body or the Elders. Kauṭilya also mentions these two divisions as Sanighamukhyas and Kumārakas distinctly existing inside Sangha organizations (Arth., XI.1, p. 378). It is clear that the terms kumāra and sanighamukhya correspond to what Pāṇini has designated as the yuvan members and vṛiddhas. Both the Yuvan and Vṛiddha members of each family received social and political recognition in the Kula as well as the Sanigha.

VRĀTA—The Vrātas were bands of war-like roving aboriginal tribes, with whom the Aryans came into conflict. The Rigveda refers to the Aryan heroes as vrātasāhah (VI.75.9). From Pānini it appears that the Vrātas lived in an elementary stage of Sangha government. The Kāśikā defines Vrāta as a Sangha living by violence (utsedha-jīvinah sanghā vrātāh, V.3.113). Pānini refers to Vrāta in a two-fold sense, the other being depredation or physical violence by which those people made a living (Vrātena jīvati, V.2.21), from which they were known as Vrātīnas. This was the general name given them by Latyayana also. According to Weber they were non-Brahmanical western tribes comprised of yaudhas or warriors (Weber, H.I.L., p. 78; Vedic Index, II.344, agrees with this). Since Pānini's time up to now the predatory habits (utsedha) of these tribes have continued. For example, the Zakkakhel clan of the Afridis are notorious as the most active bands of thieves on the Frontier (N.W.F.P. Gaz., p. 236). The Kāšikā explains vrāta as physical violence, and the word utsedha used there corresponds to prased ba of the Latyayana Śrautasūtra used for the Vrātyas (Vrātyāh prasedhamānā yānti, VIII.6 7; commentary, lokam asedhantah prasayantah). The object of

sūtra V.3.113 (Vrāta-chphañor-astriyām) is to regulate the formation of the names of Vrātas of which the Kāšikā cites two examples, viz., Kapotapākāḥ and Vrīhimatāḥ. The Mahābhārata regards the Dārvābhisaras and Darads as Vrātas (Dronaparva, 93.44; Vulgate).

VRĀTAS-VRĀTYAS-The Vrātas seem to have been the same as Vrātyas (cf. Sāyana explaining vrāta of Tāndya XVII. 1.5; as vrātya-samudāya). The Śrautasūtras give details regarding Vrātyas as to their modes of life, belongings and dress. They are said to have used a kind of very small wagon covered with a plank for seat and useful for driving along trackless paths (vipatha; also phalakāstīrna, from which Hindi phirak a dialectical word still current), a stringless bow not using arrows but probably sling balls or pellets, bellow-like skin quivers (bhastrā or kalāpa) as used by the Sakas, a silver disc round neck, goat-skin or postin (āvika), tilted cornate turban, and a kind of cloth woven with black thread (vāsah krishņa-dašam kadru Kātyāyana Sr., XXI.134), or of a different colour, but fringed with streaks of strong block colour (XXI.135) and called kadru (krishna-sūtrotam tat-kadrvākhyam, com.) Pānini's reference to Taitila-kadrū (VI.2.42) is very likely to the kadru cloth of the Taitila country. Kautilya mentions Taitila as a breed of horses which from its association with other names of north-western countries as Kambhoja, Sindhu, Bāhlīka, Sauvīra and Vānāyu (Wana Valley) should be taken as being imported from north-west India (Arth, II.30, p. 133). This gives an indication of the place of origin of the Taitila-kadrū, if the rendering of kadrū as the name of a fabric in use amongst the Vrātyas be correct.

The Vrātyas were more backward in their political organisation than the Pūgas. They were subordinate to a leader distinguished by his nishka ornament of silver (nishko rājataḥ, Kātyāyana, XXI.138; Vedic Index, II.344). Like the Pūgas, their leader also seems to have been called a Grāmaṇī (V.3.112). In the Śamyutta Nikāya, a yodhājīva gāmaṇi discourses with

the Buddha (IV.308-09). From his talk it appears that there were many old āchāryas among them who themselves being soldiers held out to those dying in action the hope of becoming one with the Sarañjita Devas (the gods of "Passionate Delight", D.P.P.N., H.1068). This agrees with the description of the Lāṭyāyana Śr. which draws a distinction between the yaudhas (warriors) and the arhants or teachers or priests wearing red turbans. (cf. Patañjali's lohītoshnīshāḥ ritvijaḥ, Bhāshya, I.1.27; I.86; also Kāt. Śr., XXII.3.15).

VRĀTYA-STOMAS—Earnest attempts were made to reclaim these people to the Aryan fold by the performance of some easy rituals called Vrātya-stoma, considered adequate to purify them (mṛijānāḥ yanti, Kāt. Śr., XXII.4.26), to put an end to their stigma (vrātyastomeneshṭvā vrātya-bhāvād virameyuḥ, ib., XXII.4.29), and to entitle them to social intercourse (vyayahāryā bhavanti, ib. XXII.4.30). It is possible that the converted Vrātyas who had been admitted to the Brāhmaṇa or Kshatriya fold were spoken of as Brāhmaṇa-kṛitāḥ, and Kshatriya-kṛitāḥ, expressions read along with Śreṇi-kṛitāḥ, Pūga-kṛitāḥ, etc. in the Śreṇyādi gaṇa (II.1.59).

These social formations indicate a vigorous movement to absorb in the Hindu society elements that were at one time outside the Aryan pail. In Pāṇini's time social movements of this type were in brisk operation as evidenced by certain words in the Ashṭādhyāyī. Sometimes even after the transition of a particular people from the Vrāta stage to that of a Saṅgha, pockets of Vrāta soldiery continued to exist. This was true of the Andhaka-Vṛishṇi Saṅgha, about which Kṛishṇa says that 'contingents, 18,000 strong, are organised still as Vrātas in our Kula organisation' (ashṭādaśa-sahasrāṇi vrātānāṁ santī naḥ kule, Sabhāparva, 13.55).

FOUR-FOLD VRĀTYA-STOMAS—The Vrātya-stoma ritual was made an extremely simple affair, allowing much latitude to its performer. Naturally the Vrātas could not been expected to handle elaborate ritual. It is therefore laid down that

the Vrātya-stoma sacrifice can be performed in ordinary fire (laukika agni, com. on Kāt. I.1.14), and with such ingredients as could be obtained in each locality (yathādravye janapade, ib. XXII.2.22). One can easily perceive that the four kinds of Vrātya-stomas were prescribed for corresponding elements of the Vrāta population:

(1) For cultural leaders in Vrātya society (vrātyagaņasya ye sampādayeyuh, Kāt., XXII.4.3). These were the same as are designated āchāryas in the Samyutta Nikāya (cited

above).

(2) For those who actually lived by violence, (called nindita and nrišamsa (Kāt., XXII.44), corresponding to the

utsedha-jivins of grammatical literature.

(3) For youngsters (tritīyana kanishṭhāḥ, Kāt., XXII.4.5; =Yuvānaḥ), who had not yet developed criminal habits. We are at once reminded of Pāṇini VI.2.28 referring to Kumāra-Pūga. This shows two things, viz. existence of juvenile groups amongst the Vrātyas, and similarity in the political texture of Pūgas and Vrātas as crude Sangha organisations.

(4) The last Vrātya-stoma converted the elderly members of a Vrātya community, jyeshthāḥ (Kat., XXII.4.6) also called sthavira (XXII.4.7), corresponding to what Pāṇini calls Vriḍdha in distinction to the Yuvan members in the families. It is thus clear that this four-fold programme aimed at working on more than one front at a time to accelerate the process of Aryanisation of the Vrātya elements in the population.

## CH. VII, SECTION 8. NAMES OF REPUBLICS

AYUDHAJĪVĪ SANGHAS—Pānini mentioned the āyudhajīvī Sanghas by name in sūtras V.3.115-17 and in the three ganas of these sūtras, Dāmanyādi, Parsvādi and Yaudheyādi. The chapter opens with a reference to such Sainghas in the Vahika country, the cradle-land of martial tribes who cultivated military art as a way of life. Mostly they were Kshatriyas. But sūtra V.3.114 (Ayudhajivi-sanghañ-ñyad Vahikeshva-Brāhamana-Rājanyāt) shows that some of them were Brahmanas also, e.g. the Gopālavas, and others called Rājanvas, which most likely correspond to those Hill States whose ruling classes designate themselves at present as Rāṇās. The Śālankayanas are stated by the Kāśikā to have belonged to the Rājanya class, and they seem to be an ancient community, as even Patañjali mentions them by the name of Trika (V.1.58; II.352), probably on account of their League of Three States (on the analogy of Shashtha as applied to the League of Six Trigartas, V.3.116).

NAMES OF SANGHAS IN THE STRAS—The following ayudbjīvī Sanghas are mentioned in the sūtras:

1. Vṛika (V.3.115). An individual member of this Sangha was called Vārkeṇya, and the whole Sangha Vṛika. This name standing alone in the sūtra with a suffix peculiar from the rest is hitherto untraced. It is stated to be āyudhajīvin, but not necessarily associated with Vāhīka. It should probably be identified with Varkaṇa, the Old-Persian form in the Behistun inscription of Darius, mentioned along with Pārthava or the Parthians (Behistun Ins., Col. II.1.16). There is a striking similarity between the Sanskrit and Old-Persian forms of the name, e.g. Vārkeṇya equal to Vārkaṇa in the singular number, and Vṛikāḥ equal to Varkā in the plural as in the expression Sakā Hauma-Varkā. The country of the Vṛikas seems to have

been the same as Hyrcania lying to the north of Parthia and on the eastern corner of the Caspian (mod. Persian Gurgan, from vrika=gurg, in the valley of the river of that name in the fertile district of Astarabad (Sanjana Studies, p. 251; Enc. Br., 17. 566). The Persians distinguished the Varkas and in fact all the northern warlike equestrian people as Sacas (Persepolis Tomb Insc., Sakā para-daraia). The name Vrika was known throughout the north-west as shown by its derivatives found in the several languages near Pānini's homeland, e.g. Ishkashmī werk, Yidghā wurk, wurg, etc. The title Bakanapati or Barkanapati, the chief of Varkanas, is applied to a Saka governor of Mathura who was associated with the foundation and repair of the Devakula of Wima Kadphises (J.R.A.S., 1924, p. 402; J.B.O.R.S., XVI, p. 258), whom Jayaswal identified as a Hyrcanian Saka. Pāṇini's acquaintance with a branch of the Śakas is not surprising, since he uses the Saka word kantha meaning 'town' in six sūtras. The Śakas were a very ancient race referred to in the Old-Persian inscriptions of Darius and settled both in Śakasthāna and on the borders of Parthia which were connected with Bāhlīka and Gandhāra. Kātyāyana also has the expression Saka-Parthava in a varttika showing that in the fourth century B.C. he knew of the Sakas and the Parthians, probably by way of commerce, previous to their political invasions. The Virks are also a section of the Jats in the Punjab, who originally seem to have been Scythians.

- 2. Dāmani (V.3.116). There is a strong resemblance between the name of this Sangha and a powerful warlike tribe still known as Damani and settled in the north-western portion of Baluchistan known as Chagai lying to the south of the Chagai Hills (Imp. Gaz., Vol. X, p. 117).
- 3. Trigarta-Shashtha (V.3.116), the League of the Six Trigartas. Trigarta stands for 'Three Valleys', viz., those of the rivers Ravi, Beas and Sutlej. The Trigartas represented a second cluster of mountainous Sanghas being counted amongst Parvatāsrayiṇah (Mārk. Purāṇa, 57.57), along with the Nīhāras,

Dārvas, Karņa-Prāvaraņas, etc., who formed the north-western group. In earlier times this region, as now, was split up into a number of States. The Kāśikā mentions the Six Members of this Confederacy as follows:—

(1) Kaundoparatha, (2) Dāṇḍaki, (3) Kraushṭaki, (4) Jālamāni, (5) Brāhmagupta and (6) Jānaki.

These are not identified. Brāhmagupta may be Bhramor. Jānakis are mentioned as helpmates of king Suśarmā of Trigarta (Ādi., 61.17; Udyoga., 4.17).

- 4. Yaudheya (V.3.117). Pāṇini's reference to Yaudheyas is the earliest known. The Yaudheyas have a long history as shown by their inscriptions and coins of different ages, and were existing upto the time of Samudragupta. Their coins are found in the East Panjab and all over the country between the Sutlei and the Jumna, covering a period of about four centuries, 2nd century B.C. to 2nd century A.D. The Mahābhārata mentions Rohītaka as the capital of the Bahudhānyaka country, where a mint-site of the Yaudheyas of Bahudhāñyaka was found by the late Dr. Birbal Sahni. Sunet mentioned as Saunetra by Pānini was a centre of the Yaudheyas where their coins, moulds and sealings have been found. The Yaudheyas do not seem to have come into conflict with Alexander, since they are not named by the Greek writers. The Johiya Rajputs who are found on the banks of the Sutlei along the Bahawalpur frontier may be identified as their modern descendants (A.S.R., XIV., p. 114).
- 5. Parŝu (V.3.117). The whole tribe was called Par-ŝavaḥ, and a single member Pārŝava. The Parŝus may be identified with the Persians. The Parŝus are also known to Vedic literature (Rigveda, VIII.6.46) where Lüdwig and Weber identify them with the Persians. Keith discussing Pāṇini's reference to the Parŝus proposes the same identification and thinks 'that the Indians and Iranians were early connected' (Ved. Ind., I.505).

Gandhāra, Pāṇini's homeland, and Pārsa, both occur as

names of two provinces in the Behistun Inscription, brought under the common sovereignty of Darius (521-486 B.C.), which promoted their mutual intercourse. Pāṇini knows Gāndhāri as a kingdom (IV.1.169). It seems that soon after the death of Darius Gandhāra became independent, as would appear from the manner of its mention by Pāṇini as an independent janapada. Pāṇini's Pāršava is nearer to the Old-Persian form Pārsa (cf. the Behistun Inscription) denoting both the country and its inhabitants, and king Darius calls himself a Pārsa, Pārsabyā pusa, 'Persian, son of a Persian' (Susa inscription, J.A.O.S., 51.222).

Baudhāyana also mentions the Gandhāris along with the Sparśus amongst western peoples (Baudhāyana Śr., 18.44, p. 397; Vedic Index, II.489).

ĀYUDHJĪVĪ SANGHAS IN THE GAŅA-PĀŢHA—The three gaṇas, Dāmanyādi, Parśvādi and Yaudheyādi give some more names of Āyudhajīvī Sanghas:

1. Dāmanyādi group (V.3.116). The names which are supported both by the commentary on Chandra and the Kāsikā are Aulapi, Audaki, Achyutanti (or Achyutadanti), Kākādanti, Sārvaseni, Bindu, Tulabha (Kāšikā Ulabha), Maunjāyana and Savitriputra. Of these only the Savitriputras are mentioned in the Mahābhārata (Vanaparva, 297.58; Karņaparva, V.49) and should be located in the Panjab adjacent to the Usinaras. The Sarvasenis (also Kāšikā, VIII.1.5; VI.2.33; cf. Bhīshmaparva, 10.59) seem to be a branch of the Sarvasenas mentioned in the Sandikādi gana (IV.3.72), like Gandhāri-Gandhāra, Sālva-Sālveya. As pointed out by Przyluski kāra in Madrakāra meant 'army' or 'troops', being an Old-Iranian word. It is the same as Skt. senā (ante, p. 57). The Madrakāras were a division of the Sālvas (IV.1.173). In medieval tradition the Salvas were known as Karakukshiyas (Hemachandra, Abbidhānachintāmaņi, IV.23), a significant name derived from their territory containing rich pockets of kāras or soldiery. This is just the idea of Sārvaseni also, and it appears that this was the region of north Rajasthan, where we have already located the Sālvas (ante, p. 55). This is confirmed by the Kāšikā counting it amongst three rainless areas, viz. Trigarta, Sauvīra and Sārvaseni. (Kāšikā VIII.1.5; VI.2.33). Mauñjāyana (V.3.116; IV.1.99) seems to be Munjān in the Upper Oxus region, the home of the Ghalcha dialect called Munjānī (cf. Mauñjāyanī in IV.1.73 gaṇa). The Baijavāpis seem to be a genuine reading in the gaṇa, being included in the commentary on Chandra also. The name occurs in the Raivatahādi (IV.3.131) and Sutangamādi gaṇa (IV.2.80), and is mentioned in the Bhāshya (II.4.81; I.496), Charaka (I.1.10), and the Satapatha (XIV. 5.5.20, Baijavāpāyana).

- 2. Parśvādi (V.3.117). There are twelve names in this gaṇa common to both Chandra and Kāśikā, only the name Viśāla is new in the Kāśikā and may be an interpolation. The first three names Parśu, Rakshas and Asura are mentioned by Patañjali as forming part of this gaṇa and must be names of actual peoples and not mythical (Bhāshya, II.270). The following is the full list of the Sanghas in this group:
- (1) Bāhlīka. Identified with Balkh in the extreme north of Afghanistan, which must have been organised as an āyudhajīvī Sangha in Pāṇini's time. It was reckoned as a satrapy of the empire of Darius, a little before Pāṇini's time.
- (2) Asura. It is a generic name but in this case may be identified with the name of the Assyrians, whose country formed part of the Persian empire in the fifth century B.C. and is mentioned in the Behistun inscription as Old-Persian Athurā, and in Susian as Assura.
- (3) Piśācha, literally a people who were consumers of raw flesh. Grierson has conclusively shown that the inhabitants of the North-Western Frontier, i.e., of Gilgit, Chitral and Kafiristan, were of Piśācha tribe, where cannibalism, eating raw flesh, once prevailed and he also observes that in the south of the Kafir country, round about Laghman, are the

Pashai Kafirs whom Dr. Hoernle proposed to identify with Piśācha as a phonetically sound equation (Piśācha, J.R.A.S., 1950, pp. 285-88). Discussing the question "Who were the Piśāchas?", he comes to the conclusion that they were originally a real people, probably of Aryan origin, who inhabited the north-west of India and the neighbouring parts of the Himalayas, and were closely connected with the Khaśas, Nāgas, and Yakshas. Pargiter agreeing with Grierson's identification of the Piśāchas has observed that 'there can be no reasonable doubt that their character as demons or goblins was a later perversion of their real nature' (J.R.A.S., 1912, p. 712). The existence of the Paiśāchī Prakrit is so well attested to by literary references that there can be no reasonable doubt about its speakers being real human beings.

(4) Raksbas. By adding the an suffix in a pleonastic sense (svārthe) prescribed by this very sūtra (V.3.117) we get the word form Rāksbasa. They also appear to have been an actual people, probably of the north-west group and of the same racial character as the Pišāchas. The Rākshasas, Nāgas and the Pišāchas fight also in the Bhārata war on both sides (Pargiter, J.R.A.S., 1908, p. 331). We find an important tribe named Rakshānis settled in Chagai district of North Baluchistan (Imp. Gaz., X.117).

(5) Marut, unidentified, but possibly connected with the Pathan tribe called the Marwats, now settled in the Marwat Tahsil of Bannu district (Imp. Gaz., VI.394).

(6) Aśani and (7) Kārshāpaṇa. The juxtaposition of these two names seems to be significant, for we find two corresponding Pathan tribes, Shinwari and Karshabun, belonging to the same stock (Imp. Gaz., N.W.F.P., p. 79). The preservation of a caste system, and the sanctity of the cow among the Shins, settled in the eastern Hindu-Kush region, north of Landi Kotal, point to their former religion being Hinduism. The mountain villages where Shins are in majority retain a trace of former idolatry in the sacred stones set up in one form or an-

other, in almost every hamlet (Afghanistan Gazetteer, p. 49). The change in religion has not yet brought about the seclusion of Shin women, who mix freely with men on all occasions, a survival of the days of their freedom.

- (8) Sātvata and (9) Dāśārha. The Sātvata and the Dāśārha clans are stated in the Mahābhārata to have formed part of the Andhaka-Vrishni Sangha,
  - (10) Vayas and (11) Vasu are names not identified.
- 3. Yaudheyadi group, is repeated twice in the Ashtadbyāyī (IV.1.178 and V.3.117), a phenomenon somewhat unusual, as observed by the author of the Nyāsa (Vichitrā bi ganānām kritir-ganakārasyeti punah pathitah). Nine names are common to both lists and they alone seem to be genuine:
  - (1) Yaudheya, as explained above.
- (2) Saubbreya, probably named after an original ancestor called Subhra referred to in sūtra IV.1.123 (Subhrādibhyascha). The name was possibly connected with the Sabarcae of Curtius, who are named as Sabagrae by Orosius. After the battle with the Oxydrakai (Kshudrakas) near the old junction of the Ravi with the Chenab, Alexander 'marched towards the Sabarcae, a powerful Indian tribe where the form of government was democratic and not regal (Curtius). Their army consisted of 60,000 foot and 6,000 cavalry attended by 500 chariots. They had elected three generals renowned for their valour and military skill;' (M'Crindle's Alexander, p. 252). The above description points to the Sabarcae having been an āyudhjīvī Sangha, which the Saubhreyas of Pānini were. In this case the Greeks particularly noted the form of their government which was democratic and not regal,

The territory of this Sangba lay on the lower course of the Chenab after it met the Ravi. The tribe was settled near the river by which Alexander was returning with his fleet after his battle with the Kshudraka-Malavas. Both banks of the river were thickly studded with their villages (Alexander, p. 252).

- (3) Śaukreya. Probably the Scythian tribe Sakarauloi, mentioned as Saruka, along with Pasionoi (Prāchīnī) in the Punyaśālā Ins. at Mathurā.
- (4) Vārteya, may be identified with the Indian tribe Oreitai, settled to the west of the river Porali which now falls into the Sonmiani Bay, west of Karachi (cf. Saunāmaneya in Subhrādi gaṇa IV.1.123; also IV.1.86). According to Curtius the tribe had long maintained its independence in those parts and it negotiated peace with Alexander through their leaders, which reflects its Sangha character (Alexander, p. 169).

On the east of the river Arabis (old name of Porali) was another independent tribe which the Greeks called Arabitai, corresponding to Sanskrit Ārabhaṭa (the home of Ārabhaṭi vṛitti), a word unknown in Pāṇinian geography, but both of them as the Greeks noted, lay within the geographical limits of India.

- . (5) Dbārteya unidentified, probably the same as the Dārteyas (Ved. Ind., I.353). The Greek writers mention Dyrta as a town of the Assakenoi or the Aśvakāyanas of Massaga, and this may have been the capital of the Dārteyas.
- (6) Jyābāṇeya, a war-like tribe whose bow-string served as arrow. The Vrātyas of the Tāṇḍya Br. (XVII.1.24) and the Śrautasūtras appear to be the same as Pāṇini's āyudha-jīvī Saṅghas of Vrāta type. Amonst them we have a feature called jyā-hroḍa, a kind of bow not for shooting arrows (anishu-dhanushka, Lāṭ. Śr., VIII.7; and ayogya dhanu, Kāt. Śr., XXII. 4.13), which seems to be a contrivance for hurling sling balls, most probably a pellet-bow. The Jyābāṇeyas seem to be a section of these Vrātyas. The Mahābhārata specifically mentions the Mountaineers (Pārvatīyas) as experts in fighting by hurling stone-blocks as big as elephant heads, and secondly by shooting stone-balls with slings (kshepaṇīya, Droṇaparva, 121. 34-35).
  - (7) Trigarta. It is mentioned here again although its

constituent states (Trigarta-Shashthas) have been referred to only in the preceding sūtra V.3.116.

- (8) Bharata. This gana alone mentions the Bharatas as an āyudhjīvī Sangha. It must be some old tradition, otherwise Pāṇini locates them in the Kuru region, on the borderland of the Udīchya and Prāchya divisions of India. According to another sūtra the Kurus lived under a regal form of government. It seems that these Bharatas lived round about Kurukshetra as a Sangha in Pāṇini's time.
- (9) Usinara already mentioned as a division of Vāhīka. It is likely that it was under the Sangha government.

The above survey of the names of the āyudhjīvī Sanghas as found in sūtras and the Gana-pāṭha shows the dominant fact that the Sanghas were clustured in the north-west regions of India and the Punjab, that they were mostly āyudhajīvins or martial tribes, a feature retained by most of them to this day, and that they were living in different stages of political evolution, ranging from the Vrātas and Pūgas to Śrenis and Sanghas, as represented by the wild Piśāchas at one end and the highly organised Yaudheyas on the other.

SOME MORE REPUBLICS—Besides the āyudhajīvī Sanghas stated as such in the Ashṭādhyāyi, there were some other communities in Pāṇini's time, which as we know from other sources were republics. These were:

- (1) Vriji (IV.2.131). They are known as Vajji in Buddhist literature and said to have included eight confederate clans of whom the Lichchhavis and the Videhas were the most important, both being described as republics in Buddha's time (Buddhist India, p. 25).
- (2) Rājanya (IV.2.53). They are mentioned also by Kātyāyana and Patañjali and in the Mahābhārata. The abundance of their coins in Hoshiarpur district points to it as their region (vishaya or deśa). According to Pāṇini the country occupied by the Rājanyas was called Rājanyaka. It appears

that in the period after Alexander which witnessed large-scale tribal movements, a branch of the Rājanyas had moved to the region of Mathurā where also their coins have been found.

- (3) Mahārāja. Pāṇini refers to bhakti shown to Mahārāja in sūtra IV.3.97. So far as the word form is concerned it is the same for the name of Mahārāja as a people and as a deity. The existence of a Mahārāja Janapada is proved by their coins found in the Panjab. Traces of the ancient name are probably still preserved in the collection of four large villages in the Moga Tahsil of Ferozpur district which is the headquarters of a Pargana and still called Mahārāja, held by the Maharajki clan of Jats. The Maharajkians who own the surrounding country as Jagirdars form a distinct community, physically robust and opposed to subordination (Punjab Gazetteer, I.453).
- (4) Andhaka-Vṛishṇi (VI.2.34). The Purāṇas make them identical with the Sātvatas whom Pāṇini mentions as a Saṅgha in the Gaṇa-pāṭha. The Mahābhārata refers to them as a Saṅgha and so does Kauṭilya. Pāṇini refers to Rājanya leaders amongst the Andhaka-Vṛishṇis, which as explained by the Kāśikā denoted members of such families as were entitled to be consecrated to rulership (abhishikta-vainśya). The chief feature of the Andhaka-Vṛishṇi constitution appears to be a full-fledged party system. The party of Akrūra and that of Vāsudeva are referred to by Patañjali showing that the followers of each leader were designated in accordance with their respective party leaders, e.g. Akrūra-vargya, Akrūra-vargīṇa, and Vāsudeva-vargya, Vāsudeva-vargīṇa (II.295).
- (5) Bharga (IV.1.178). Pāṇini refers to the Bhargas as a Kshatriya tribe. The Buddhist records mention them as a republic.

NAMES OF SOME IMPORTANT TRIBES—Some tribes in the Gaṇa-pāṭha deserve to be mentioned as being of considerable importance. We are indebted to the Greek historians of Alexander for the information that most of these were republics.

- (1) Kshudraka (IV.2.45) identified by Sir R. G. Bhandarkar with the Oxydrakai of Greek writers. Curtius refers to them as Sudracae (M'Crindle, Alexander's Invasion, p. 238).
- (2) Mālava (Gk. Malloi). According to the Greek writers both these communities were settled in the region where the Ravi joins the Chenab. They are said to have offered the stoutest resistance to the Greek invaders.
- (3) Vasāti (IV.2.53; Rājanyādi gaṇa) identified with Greek Ossadioi, settled somewhere in the region of the confluence of the Chenab and Sutlej with the Indus.
- (4) Āprīta (Rājanyādi gaṇa). These are to be identified with the Aparytai of Herodotus (C.H.I., p. 339), the ancestors of the Afridis, whose own pronunciation of the name is Āprīdī. Their country is called Āprīdī-Tīrāh.
- (5) Madhumant.—Pānini mentions Madhumat as the name of a country in the region of Gandhara (Kachchhadi, IV.2.133; Sindbvādi, IV.3.93). The name occurs in sūtra IV.2.86 also as a deia-nāma. The Mahābhārata mentions the Madhumantah as a people of the north-west (Bhīshmaparva, IX.53). The Madhumants are clearly the Mohmands, who occupy the territory to the north of the Kabul river, their home-land Dir-Bajaur covering an area of 1200 sq. miles (Afghanistan Gaz., p. 225). On the map one can at once notice the relative position of these two powerful tribes who were close neighbours. What appear to be the ancient names of Dir and Tirah are preserved in Patanjali, who refers to Dvīrāvatīko dešah, Trīravatiko deśah as pair names (Bhāshya, I.4.1; I.301; II.1.20; I.382). The former is Dir (land of the two rivers) so called from the Mohmand homeland between the Kunar and Panjkora rivers. Similarly the extensive Afridi-Tīrāh was Trīrāvatīka, from the three rivers Kabul, Bara and Indus (Kubhā-Varā-Sindbu) which enclose it.
- (6)-(8) Hāstināyana, Āśvāyana, Āśvakāyana. The first is mentioned in sūtra VI.4.174, the second in IV.1.110, and the third in the Naḍādi gaṇa (IV.1.99).

While describing Alexander's campaign from Kapiśa towards the Indus through Gandhāra, the Greek historians mention three important war-like peoples, viz. the Astakenoi, with capital at Peukelaotis, the Aspasioi in the valley of the Kunar or Chitral river, and the Assakenoi settled between the Swat and the Panjkora rivers, with capital at Massaga, and more specially in the mountainous regions of the Swat. The Paninian evidence throws light on these three names for the first time:

- (a) Aspasioi-Aśvāyana; in Alishang or Kunar Valley.
- (b) Assakenoi=Aśvakāyana; in the Swat valley and highlands, with capital at Maśakāvatī.
- (c) Astakenoi=Hāstināyana; near the confluence of the Swat with the Kabul, with capital at Pushkalāvatī.

The Asvayanas and the Asvakayanas were the bravest fighters of all, being strongly entrenched in their mountainous fortresses. Alexander himself directed the operations against them. The Aśvakayana capital at Massaga or Maśakāvatī is given in the Bhashya as the name of a river (IV.2.71), that should be looked for in that portion of the Suvastu in its lower reaches where Mazaga or Massanagar is situated on it at a distance of 24 miles from Bajaur in the Yusufzai country. In times of danger the Asvakayanas withdrew into the impregnable defences of their hilly fortress which the Greeks have named Aornos. It appears to be the same as Varana of the Ashtādhyāyī (see ante, p. 69, for its identification with modern Unra on the Indus). The Greeks also mention another of their towns, viz. Arigaeon, which commanded the road between the Kunar and the Panjkira valleys, and is comparable with Ārjunāva of the Kāśikā (rijunāvāin nivāso deśah, IV.2.69).

## CHAPTER VIII

## CHRONOLOGICAL CONSIDERATIONS

Our study of the historical material preserved in the Ashtādhyāyī, its geographical and cultural data, glimpses of social life and religious institutions, may help us to ascertain its chronological position.

PREVIOUS VIEWS-The question of Panini's date has been discussed by many previous writers with different conclusions. We may profitably consider them. Goldstücker in his wellknown work held that Pānini must have lived in the seventh century before the Christian era at the latest. He rightly observed: 'The investigation of the relative position which Panin! bolds in ancient Sanskrit literature is more likely to lead to a solid result, than speculations as to the real date of his life.' (Pānini, His Place in Sanskrit Literature, p. 67). His position was that Panini lived after Yaska and before the Buddha. Sir R. G. Bhandarkar held the same view mainly on the ground that Pānini does not show acquaintance with South India. Pathak assigns him to the last quarter of the seventh century B.C., just before the appearance of Mahavira, the junior contemporary of Gautama Buddha. (A.B.O.R.I., XI., p. 83). D. R. Bhandarkar proposed seventh century B.C. in his 1918 Carmichael Lectures (p. 141), which he later changed to about the middle of sixth century B.C. (A.I.N., 1921, p. 46). Charpentier thinks that the date should be 550 B.C. (J.R.A.S., 1913, p. 672-74). His revised view was: 'As for the date of Pānini I have suggested, sometime ago, that it should be placed somewhere about 500 B.C. and I feel more and more convinced that such a suggestion is mainly correct.' (J.R.A.S., 1928, p. 345). H. C. Raychaudhry holds: 'In all probability Pānini lived after the Persian conquest of Gandhara in the latter half of the sixth century B.C., but before the fourth

century B.C. With a date in the fifth century B.C. all the evidence accommodates itself.' (Early History of the Vaishnava Sect, 1936, p. 30). Grierson believed that a century or 150 years at the most elapsed between Pānini and the Aśokan inscriptions, which represent the spoken dialect of the day. This would place Pănini about 400 B.C. Macdonell's latest view (India's Past) was that Pāṇini did not live later than 500 B.C. Bohtlingk, however, makes Pānini more modern by dating him to about 350 B.C. Weber placed him subsequent to Alexander's invasion. It is unfortunate that a scholar of his depth and mastery over grammatical intricacies should through a grievous misunderstanding of the kārikā on sūtra IV.2.45 about Apisali and Kshudraka-Mālavas, have advocated a specious argument about the relative dates of Apisali, Pāṇini and Alexander (H.I.L., p. 222; see V. S. Agrawala, Patañjali on the Kshudraka-Mālavas, Poona Orientalist, Vol. I, No. 4, Jan. 1937, pp. 1-7). Liebich's opinion on this point is that we have not yet sufficient ground to come to a definite conclusion, but that in all probability Pānini came after the Buddha and before the commencement of the Christian era, and that he was nearer the earlier than the later unit. It would thus appear that the range of Panini's date is in the opinion of scholars limited to a period of three centuries between the seventh and the fourth century B.C. We may now try to examine this question more closely within these two limits on the basis of the data set forth above.

LITERARY ARGUMENT—As Liebich has summed up, the literary argument of Goldstücker leads to the following result: the Āraṇyakas, Upanishads, Prātiśākhyas, Vājasaneyī Saṃhitā, Satapatha Brāhmaṇa, Atharvaveda, and the six philosophical systems were unknown to Pāṇini, but he knew the Rigveda, Sāmaveda and Krishṇa Yajurveda. He holds that Pāṇini lived after Yāska. This argument does not bear scrutiny. Thieme from his critical study of Pāṇini's Vedic material has shown that the Vedic texts undoubtedly used by Pāṇini included the RV.

MS., KS., TS., AV., and most probably the SV. (Pānini and the Veda, 1935, p. 63); he further opines that Sākalya's Padapatha of the Rigveda and the Paippalada Śakha of the Atharvaveda were also known to him. To take another significant example, Goldstücker had come to the conclusion that Pănini did not know the Upanishad literature, and hence his time should be antedated to the Upanishadic period. This position cannot be maintained since Panini knew the word Upanishad in a pejorative sense (I.4.79) which must have taken considerable time to develop after the close of the Upanishadic age. On the basis of this sūtra Keith also accepted Pānini's knowledge of the Upanishads (Tait. S., Eng. Trans., p. clxvii). But Pānini's literary horizon is not confined to Vedic texts only; it goes much further to include those several stages of literary and linguistic evolution at the end of which his own work came into existence. The Chapter on Literary Data has set forth this evidence exhaustively, and in that light we may vouchsafe that the process of literary evolution inside the Vedic Charanas had already brought into existence such literary types as the Kalba Sūtras and the Dharma Sūtras. Outside the Charanas much of the Vedanga literature as Vyākaraņa, with its special commentaries on Nouns and Verbs (Nāmika and Ākhyātika, IV.3.72) and a vast body of Yājñika literature and its commentaries had been compiled. Pāṇini also knows of the Mahābhārata (referred to for the first time in the Āśvalāyana Gribya Sūtra), the text of which must have taken shape by his time (Utgikar, Bhandarkar Commemoration Volume, p. 340). Further, he refers to later literary types, as sloka and their authors the ślokakāra, to secular subjects like Natasūtras, and even to classical Sanskrit works, such as Sisukrandīya, Yamasabbīya, and Indrajananiya, which were the earliest examples of classical poetry and are mentioned for the first time by Pānini. Pānini thus witnessed the rise of classical Sanskrit poety and the sūtra and śloka forms of literature flourishing together in his time. Moreover, the style of his sūtras is much more finished, as he himself would call it (pratishnātam sūtram), than that of some of the Dharma- and Grihya-sūtras. We must therefore abandon Goldstücker's estimate of Pāṇini's time.

PĀNINI AND THE SOUTH-The agrument that Pānini did not know of South India should not be pressed too far. Firstly, Yaska whom even Goldstücker considers prior to Panini shows acquaintance with southern social customs and grammatical usage. As pointed out by Keith, Yaska "already mentions a southern use of the Vedic word vijāmātri for a son-in-law who pays to his father-in-law the price of the bride (vijāmāteti šašvad Dākshinājāh krītāpatim āchakshate, Nirukta, VI.9; Keith, His. of Sans. Lit., p. 15). Secondly, the Deccan was the home of Sanskrit as early as Katyayana's time whom Patañjali regards as a southerner on account of his partiality for the use of Taddhita (cf. priya-taddhitah Dākshinatyāh). Kātyāyana is not far removed in time from Pănini. According to Eggeling: 'As regards the dates of Kātyāyana and Patañjali I accept with Professor Bühler and others, as by far the most probable the fourth and the middle of the second century B.C., respectively (Satapatha Br. Intro.). Thirdly, Pāṇini besides referring to the sea and the islands lying near the coast and in mid-ocean, actually mentions that portion of the country which lies between the tropics as antarayana deśa (VIII.4.25). It can refer only to the Deccan lying south of the Tropic of Cancer, which passes through Kachchha and Avanti. Pānini also knows of Asmaka on the Godavari (modern Paithana) which was south of Avanti. He also refers to Kalinga on the eastern coast which too lay within the tropics. We thus see that Pănini's silence about the south is not quite so absolute as presumed by Sir R. G. Bhandarkar.

PĀŅĪNI AND MASKARĪ—It has been shown above that Pāṇini's reference to Maskarī Parivrājaka in the light of Patañ-jali's explanation of that name connecting it with the Karm-āpavāda doctrine, points to the teacher Mankhali Gosāla, whose doctrine of Determinism, Daishtika Mati, also finds mention in

Pāṇini. Dr. Hoernle holds that Gosāla lived about 500 B.C. (Ājivikas, Hasting's Ency. of Religion and Ethics, I.259 seq.). According to the Bhagvatī Sūtra, Gosāla founded his order at Sāvatthī sixteen years before his death. Charpentier agreeing generally with Hoernle thinks that the date of Mankhali's decease should be moved a little later (J.R.A.S., 1913, p. 674). This suggests the upper limit of Pāṇini's time at about 500 B.C.

PĀNINI AND BUDDHISM-The fact that Mankhali Gosāla was a contemporary of the Buddha and also known to Pāṇini helps us to understand some of the sûtras dealing with a few terms which have greater association with Buddhism, e.g. Nirvāna (VIII.2.50); Kumārī Śramanā (maiden nuns, II.1.70); chivarayate in the sense of 'donning the monk's robe' as explained by the Kāšikā (samchīvarayate bhikshuh, III.1.20), and the religious Sangha called Nikāya which did not know the distinction of upper and lower (auttarādharya). Such a Sangha was a typical Buddhist institution. It had been the custom among the primitive religious wanderers to be organised under a head who was called master (Satthā). But the Buddhist sect after his decease developed on different lines, which was looked upon by contemporaries as somewhat strange. The headship was abolished, all members of the Sangha were on a footing of equality. The principle of obedience to a Master was watered down to respect and reverence for elders and politeness for equals. For the discharge of the functions of its collective life, the whole body of monks constituted a perfectly democratic community. This is exactly the nature of the new religious Sangha envisaged in the significant Paninian term anauttarādbarya, III(3.42). The political Sangha called Gana, although professing to be democratic, worked on a different model in which some were rajanah and the others commoners. These institutions mark out a date for Pānini after the Buddha.

ŚRAVISHŢHĀ AS THE FIRST NAKSHATRA—In a list of ten nakshatras in sūtra IV.3.34, Pāṇini puts Śravishṭhā as the

first. Although the other stars in the sūlra are not strictly in the order of the ecliptic, the commencement of the list with Śravishtha appears to have a reason for it. Śravishthā was the first star in the calendar of the Vedanga Ivotisha which must have been compiled during the period when other Vedånga works including Vyākaraņa were also written. As the subject is full of technical difficulties it would be safer to go by the opinion of experts in the matter. The relative positions of the nakshatra lists together with their significance is stated by G. R. Kaye as follows: "The early lists all begin with Krittikā, but the Mahābhārata puts Śravana first. The Jyotisha Vedānga begins with Śravishthā; the Sūryaprajnapti with Abhijit, the Sūrya Siddhanta with Aśvini. But here Aśvini is definitely equated with the vernal equinox, while Abhijit, Śravana and Śravishthā, which are continuous, are equated with the winter solstice ... ' (The Nakshatras And Precession, Indian Antiquary, Vol. 50, p. 47).

According to Tilak, as quoted by Kaye, it was stated by Garga that Krittikā was first for purposes of ritual, while for the purpose of the calendar Śravishthā was put first, the same as we find in Panini's list. Leaving aside the question of the Krittikās standing at the head of the asterisms and the possible basis of this phenomenon in the coincidence of the vernal equinox with Krittikās at a certain epoch connected more properly with Vedic chronology, we must consider the implications of the reference to Śravishthā as the first of the Nakshatras. The generally accepted theory is that the Nakshatras were 27 or 28 constellations that roughly marked out the ecliptic. The winter solstice was at the first point of the Dhanishthā in the period of the Vedānga Jyotish when Dhanishthā was put first. Later on it travelled to the preceding Nakshatra Śravana, and at the time when this happened the asterism Śravana was reckoned as the first in the calendar.

It is the latter phenomenon, viz. the recording of the Nakshatra Śravaņa at the head of the list that is definitely alluded to in a passage of the Mahābhārata of considerable historical interest. Fleet discussed the epic evidence, Śravaṇādīni rikshāṇi (the Nakshatras begin with Śravaṇa, Aśvamedhaparva, 44.2) to show that 'the winter solstice had travelled westwards from the first point of Śravishṭhā (Dhanishṭhā), where it was placed by the astronomy which was preserved in the Jyotisha-Vedāṅga, and was in the preceding Nakshatra Śravaṇa (J.R.A.S., 1916, p. 570). Prof. Keith carrying the discussion further admitted the correctness of Fleet's view and pointed out that the passage had been much earlier discussed by Hopkins with the same result in the J.A.O.S. for 1903 (J.R.A.S., 1917, p. 133). It is, however, interesting to note that a passage in the Vanaparva refers to the Dhanishṭhādi reckoning of the stars (Vanaparva, 230.10) as done by Pāṇini.

The important question to be discussed in this connection is the determining of the time when the transition of the winter solstice from Dhanishthä to Śravaṇa took place. This would naturally mark the lower limit of Pāṇini's date, since in his enumeration of stars (IV.3.34) he put Dhanishthä at the head of the list. It may be mentioned in this connection that the Mahābhārata attributes to Viśvāmitra the new arrangement of asterisms by substituting Śravaṇa for Dhanishthā. Prof. Keith taking Viśvāmitra as an astronomical reformer takes that reform to have consisted in putting Śravaṇa at the beginning of the asterisms in place of Dhanishthā (J.R.A.S., 1917, p. 39).

Prof. Jogesh Chandra Ray has investigated the time of the transition of the winter solstice from the first point of the Dhanishthā to the star Śravaṇa on the basis of astronomical calculations in his paper entitled 'The First Point of Aśvini' (1934). His conclusion is that the Nakshatra Sravishṭhā is the star Beta Delphini, and that it was in the fourteenth century B.C., or in the year B.C. 1372 when the sun, moon and the star Śravishṭhā were in conjunction at the time of the winter solstice, and since one Nakshatra period changing at the rate of about one degree in 70 years takes somewhat less than a

thousand years (about 933 years), it was in the fifth century B.C. that Śravana occupied a position in relation to the winter solstice similar to that occupied by the Śravishthā previously. Counting from B.C. 1372, the precession amounted to one Nakshatra-space in B.C. 405, and the nearest year in which new moon happened on the day of the winter solstice was 401 B.C. At this time Śravana was observed as the star of the winter solstice and recorded by astronomers as being the first in the list of Nakshatras, a fact implied in the statement of the Mahābhārata cited above (Śravanādīni rikshāni) and interpreted in this light by Fleet, Keith and others. In case the date 401 B.C. represents the year of Śravana Nakshatra coinciding with the winter solstice, the literature and authors referring to Śravishthā as the first of the Nakshatras must be placed anterior to that date. With reference to the question of Panini's date this gives us a reliable basis to fix the lower limit of his date at about 400 B.C. The upper limit as stated already may be circa 500 B.C. from the date of Makkhali Gosāla referred to as Maskarī in the Ashtādbyāvī.

THE NANDA TRADITION-There is a strong tradition preserved in both the Buddhist and Brahmanical literatures that Pāṇini was a contemporary of some Nanda king. Tārānātha, in his History of Buddhism compiled from older sources (1608 A.D.) states that Pănini lived in the time of a Nanda king. Somadeva (1063-1081) in the Kathāsaritsāgara and Kshemendra in the Brihatkathāmañjarī (11th century) also associate Pānini with king Nanda and his capital Pātaliputra. The newly discovered Manjuśri-Mūlakalpa, which Jayaswal placed roughly at about 800 A.D., confirms the tradition that 'king Nanda's great friend was a Brāhmaņa, Pānini by name' (Jayaswal's edition, p. 14), and also adds that in the capital of Magadha there were Brāhmaņa controversialists who gathered at the king's court. Yuan Chwang from his record of the tradition as handed down in Pāṇini's birth-place, Śalātura, states that Panini after finishing his work sent it to the supreme

ruler, who exceedingly prized it and issued an edict that throughout the kingdom it should be used and taught to others (Siyuki, p. 115). Although the name of the king and that of the town of Pataliputra are not mentioned, he confirms the tradition of Panini's connection with a royal court and of the patronage bestowed upon him in recognition of his work. Rājašekhara (900 A.D.) connects Pāṇini with the Śāstrakāra Parikshā of Pātaliputra which as we have shown corresponds with the account of the Great Synod or the literary assembly held under royal patronage which Megasthenes found functioning at Pataliputra as an old institution (M'Crindle's Megasthenes, Frag. XXXIII; Strabo, XV.1). A tradition which is thus testified by different sources, Greek, Chinese, Indian, seems to be based on truth. The contact between Udichya (Northern) and Prāchya (Eastern) scholars was a feature of intellectual life of ancient India from the time of the Upanishads, as in the case of Uddālaka Āruni of Panchāla proceeding to the Madra country in search of higher knowledge. Pāṇini also shared in this kind of intellectual intercourse. We have seen the same thing in the career of Chanakya who visited Pataliputra in quest of disputation (ante, p. 20).

An important factor in determining Pāṇini's time would be the name and time of the Nanda king known to Pāṇini. This question is of admitted difficulty owing to confusion in the chronology of the Nandas. There are, however, two points more or less fixed: (1) the year 326 B.C. as the final year of the last Nanda king, ruling over the country of the Prasii and Gangiridae as reported to Alexander. He was overthrown by Chandragupta Maurya. The other date is obtained by reckoning from the fifth year of king Kharvela who in the Hathigumpha inscription dated in the year 165 of the era of Rājā Muriya refers to Nandarāja in connection with a canal excavated by him 300 years earlier. Another passage in the same inscription records that king Nanda carried away to Magadha the statue of the first Jina. We thus find King Nanda ruling

in Pataliputra about the year 465 B.C. This Nanda king can be no other than Nandivardhana (Early History of India, p. 44). Of the kings of Śiśunāga dynasty as given in the Purānas Nandivardhana and Mahānanda occur as the last two kings after whom came the base-born Nandas. With the point 465 B.C. falling within the reign of king Nanda, we arrive at a tolerably fixed period for the reigns of these two Nanda kings as c. 473 B.C. to 403 B.C. Mahāpadma Nanda and his sons appear to have followed from about 403 B.C. to 323 B.C. According to Tārānātha, Nanda the patron of Pāṇini was the father of Mahapadma. It is thus evident that the Nanda king, the reputed contemporary and patron of Pāṇini of the popular stories is Mahananda, son and successor of Nandivardhana, or the Nandarāja of the Hathigumpha inscription. In view of the joint period of the reigns of Nandivardhana and Mahanandin as stated above, we may assume the dates c. 446 to 403 B.C. for the reign of Mahanandin.

The above hypothesis of Pāṇini's date based on the traditional account of his contemporaneity with a Nanda king fits with the other known facts about him. The various lines of arguments in connection with Pāṇini's chronology seem to converge at this particular point, viz. the middle of the fifth century B.C.

It is worth noting that grammatical literature also has preserved some references to the Nanda tradition. In the illustration Nandopakramāni mānāni (Kāšikā on II.4.21) we have an allusion that the weights and measures of the country were standardised for the first time by king Nanda. Again in sūtra VI.2.133 Pāṇini says that the word putra coming after the word rājā does not take an initial acute accent. The commentators agree that the word rājan includes here also the specific names of individual kings, and in this connection they remember the name of king Nanda, whose son is referred to as Nanda-putra. We have the testimony not only of Khārvela that the name of the king ruling in 465 B.C. was Nanda, but

the form is also supported by the Jaina tradition and the Bhavishya Purāna as pointed out by Jayaswal (J.B.O.R.S., 1917). We may identify Nanda-putra with Mahanandin, son and successor of King Nanda or Nanda-rāja, or Nandivardhana. POLITICAL DATA-Pāṇini refers to Magadha as one of the monarchies, but it was not yet an empire. In his time the Udichya country was made up of a number of kingships like Gandhara and numerous republics as the Yaudheyas and Kshudraka-Malavas, etc. We know it as a fact that none of those kings who ever sat on the throne of Rājagriha or Pāṭaliputra from Bimbisara up to the last Nanda king dethroned by Chandragupta, ever extended his empire so far as the Vāhīka country. The Greeks under Alexander found the Nandas east of the Beas. In the Prachya country, Panini mentions Magadha, Kosala, Avanti, Kalinga and Sūramasa as separate States (Janapadas), which as stated by Katyayana (vārttika on sūtra, IV.1. 168) were monarchies (Ekarāja).

It was not yet the resounding epoch of Magadhan imperialism. Ajātašatru as a Magadhan king, had annexed only the kingdoms of Käśi and Kosala. It was only a passing phase. The last two rulers of this dynasty, Nandivardhana and Mahānandin, did not make any annexations. The Puranas state that it was only Mahapadma Nanda who annexed the leading Kshatriya states of the time, viz. the Aikshvākus of Kosala, Pañchālas, Kāśis, Haihayas, Kalingas, Aśmakas, Kurus, Maithilas, Śūrasenas and Vītihotras, and made himself the sole sovereign (ekrāt) or emperor. Therefore the period, when Pānini spoke of the kingdoms of Kuru, Kosala, Magadha, Kalinga, Avanti and Asmaka, specifically as so many small monarchical states must have preceded the time of Mahapadma Nanda, before about 400 B.C. Thus the political data of the Ashtādhyāyī must relate to the epoch circa 450 to 400 B.C. REFERENCE TO YAVANĀNI-Pānini's reference to Yavana and Yavanani writing, possesses distinct value for his

date. The term Yauna (=Skt. Yavana) for Ionia and the

Ionian Greeks is first used in the inscriptions of Darius I (516 B.C.). It must have been after this that the term Yavana came into circulation in parts of India which also formed part of the Achaemenian empire. It would not be right to suppose (as Benfey, Burnell, Weber and Wackernagel have done) that the Macedonian Greeks who first came into India with Alexander about two centuries later first became known as Yavanas. In fact the Yavanas had been known much before Alexander who already found in the Kabul valley a colony of Nysian Greeks. In the Old-Persian Inscriptions of Darius (521-485 B.C.) we first find the term Yauna denoting Ionia and an Ionian, and Yauna, Ionians, corresponding to Sanskrit Yavanah and Yavanah (Sukumar Sen, Old Persian Inscriptions, p. 223). Both Ionia and Gandhara, the home of Panini, formed part of the empire of Darius and also continued under the reign of Xerxes, who recruited to his army a contingent of Indians from Gandhara in his expedition against Greece about the year 479 B.C. Thus was furnished a firsthand opportunity for the Indians to become acquainted with the Greeks even before Alexander. As Prof. Keith has observed: 'If it is borne in mind that Pānini was a native of Gandhara according to Hiuen Tsiang, a view confirmed by the references in his grammar, it will not seem far-fetched to consider that it was most probably from the older tradition that the name Yavanānī was derived' (Aitareya Āranyaka, p. 23). The word lipi borrowed from the Achaemenian dipi meaning 'edict' is conspicuous by absence in the Buddhist canonical works and seems to have been borrowed from Achaemenian Iran. It may further be assumed that the Yavanānī lipi was known only in Gandhara and the north-west at that time (ante, p. 312).

PĀŅINI AND THE PARŚUS—Pāṇini refers to a people called Parśus as a military community (Āyudhjīvī Sangha, V.3. 117). The term Parśu corresponds to the Old-Persian form Pārsa as given in the Behistun inscription. The Babylonian form

of the name in the same Inscription is Par-su which comes closer to Pānini's Parśu (Behistun Ins., British Museum, pp. 159-166). It appears that Parsu was the name of a country as noted in the Babylonian version, and Pārśava was a designation of an individual member of that Saingha, a form of the name which corresponds to Babylonian Par-sa-a-a. A part of India was already a province of the Achaemenian empire under Cyrus and Darius, which it enriched with its military and material resources. Indians were already serving in the army of Xerxes and fighting his battles about 487 B.C., while that very small part of India paid as much revenue as the total revenue of the Persian empire. There was thus an intimate intercourse between north-western India and Persia. Pānini as one born in that region must have had direct knowledge of such intercourse. Not only Gandhara but also Sindhu corrupted into Persian Hindu in the inscriptions of Darius (corresponding to the Sind-Sagar Doab of the Western Panjab) came under the occupation of the Achaemenians at one time (cf. Hamadan Plate Ins., J.R.A.S., 1926, pp. 633-6; Jour. Cama Ins., 1927; Memoir A.S.I., No. 34). (Cf. ante, p. 445).

Similarly, there is also the possibility that another Persian tribe came to be known in India in Pāṇini's time who refers to Vrikas as an āyudhajīvī Sangha, a community that lived by the profession of arms. An individual member of this tribe was called in Sanskrit Vārhenya, a term which seems to correspond to Varakāṇa of the Behistun Inscription. The whole tribe was called Vṛikāḥ, which corresponds to the form Varkā in the plural number in the name Saka-Haumavarkā in the Naksh-i-Rustam Inscription. The Vṛikas thus appear to be a section of the war-like Saka tribes. (Cf. ante, pp. 443-44).

Pāṇini notices kanthā-ending place-names as being common in Varṇu (Bannu valley) and the Uśinara country between the lower course of the Chenab and Ravi, and also instances some particular names such as Chihaṇa-kantham and Madura-kantham, which rather appear as loan-words (ante, pp. 67-68). In fact kanthā was a Scythian word for 'town', preserved in such names as Samarkand, Khokan, Chimkent, etc.

The above data point to somewhat closer contacts between India and Persia during the reigns of the Achaemenian emperors Darius (522-486 B.C.) and Xerxes (485-465 B.C.) as a result of their Indian conquests. This explains the use in India of such terms as Yavana, Paršu, Vrika, Kanthā. To these we may add two others, viz. jābāla (goat-herd) and hailibila (poison), mentioned by Pāṇini (VI.2.38) which were really Semitic loan-wards.

This evidence points to Pāṇini's date somewhere after the

time of these Achaemenian emperors.

THE KSHUDRAKA-MĀLVAS—On account of Pāṇini's reference to the Kshudrakas and the Mālavas in the formation Kshaudraka-Mālavī Senā in the gaṇa-sūtra of sūtra IV.2.45, Weber argued that this reference brings down the time of Pāṇini (and also his predecessor Āpiśali) to after Alexander's invasion which was resisted by those two Indian tribes, whom the Greeks noted as Oxydrakai and Malloi. He argued that the Kshudrakas and the Mālavas had been usually at war with each other and a foreign invasion welded them to fight a common foe through a united army called Kshaudraka-Mālavī-Senā. These united forces, opposing Alexander are said by Curtius to have comprised 90,000 foot-soldiers, all fit for active service, together with 10,000 cavalry, and 900 war chariots (Alexander's Invasion, p. 234).

So far as Apisali is concerned Weber misunderstood the text relating to Apisali-vidhi (quoted by Patañjali), which has no connection with the Kshudraka-Mālavas and is concerned only with the formation ādhenavam. Its purpose was restricted to showing the prevalence of Tadantavidhi in the Sāmūhika suffixes.

Secondly, the confederate military arrangement between

the Kshudrakas and the Mālavas was not a temporary makeshift, but permanent arrangement so as to find its way into current language in the phrase Khandraka-Mālavī Senā as a special grammatical formation. There is therefore every likelihood that Pāṇini himself had composed the Gana-sūtra Kshudraka- Mālavāt Senā-samjnāyām, on the basis of his personal knowledge of such an army. In fact the details given by the Greek writers rather indicate that this joint army had existed before Alexander and was not the outcome of any emergency. Curtius definitely states that the Kshudrakas and the Malayas in accordance with their custom had selected as their head a brave warrior of the nation of the Kshudrakas who was an experienced general (Alexander's Invasion, p. 236). Unfortunately, at the time of giving battle to Alexander the events took a turn just opposite to what Weber would have us believe. Diodoros expressly states 'that the Kshudraka-Mālavas could not agree as to the choice of a leader and ceased in consequence to keep the field together' (Alex. Inv., p. 236, f.n.). Curtius almost confirms this version of Diodoros by saying that 'overnight a dissension arose amongst them and they retired to their mountain recesses.' He goes one step further to acquaint us with the subsequent course of events saying that most of the army took shelter in the fortified city of the Kshudrakas which was besieged by Alexander, and this was followed by the most heroic resistance and the fiercest attack that the Greek army had experienced so far, in which Alexander himself received a deadly wound. Obviously after their separation from the Mālavas, the Kshudrakas bore the brunt of the battle singly. Finally, peace was negotiated on behalf of the fighters by depuing one hundred ambassadors whom the Greeks received with uncommon hospitality and honour that would be rather unusual in the case of a crushed enemy. The grammatical illustration which Patanjali repeats thrice in the Bhashya (Ekakibbih Kshudrakair-jitam, asahāyair-ityarthah, I.83; I.321; II.412) presents a true picture of the events as preserved on the Indian

side, namely that the Kshudrakas were matched alone against the invaders and emerged triumphant.

It is thus certain both on the testimony of Pāṇini and the Greek writers that the league of the Kshudraka-Mālava army had been in existence long before Alexander.

The numerous Ayudhjīvī Sanghas in the Panjab and North-West India point to political conditions as existed before the rise of Mauryan Imperialism. Pāṇini treats of the development of Sangha polity as if it were at its zenith. Gradually Sanghas began to decline and the march of the Greeks through their land completely exposed their political weakness. This made the Sanghas unpopular and created a movement for their unification of which indications are found in Kauṭilya's Arthaśāstra. Pāṇini lived in the peak period of the Sanghas, and an interval of about a century should be allowed for their decline against the rise of a centralised monarchy or empire. This would assign a date to Pāṇini a hundred years before the rise of Mauryan imperialism.

PANINI AND KAUTILYA-It has been argued that Kautilya writes a language which, though archaic in certain respects is decidedly later than the language of the Ashtādhyāyī (Thieme, Pāṇini and the Veda, p. 80). From the foregoing studies it is apparent that the works of both authors know of many similar institutions. Sometimes the Arthasastra appears as the best commentary on Pāṇini in regard to certain specific and peculiar terms referred to by both, e.g. Maireya, Kāpišāyana, Devapatha, Akranda, Yuktārohī, Upanishad, Vinaya, Parishad. Vishya, Śvāganika, Apamityaka, Yāchitaka, Ārya-krita, Yaujana-satika Dūta, Ashadakshīna, Vyushta, Vaiyushta transactions, Purusha and Hasti measures, Kedara, Parikheyi, Māhisha, Adhyaksha, Yukta, Avakraya, etc. In the foregoing studies we have oft-times dealt with institutions of all kinds which are not only similar but sometimes identical in the Ashtādhyāyī and the Arthasastra. The common evidence of the names of punch-marked coins, as well as weights and measures, as noticed in the body of this work, furnishes some striking parallels between Pāṇini and Kauṭilya. As Thieme puts it, Kauṭilya was junior to Pāṇini and the period of one century may reasonably be allowed to have intervened between the two.

EVIDENCE OF COINS-The numismatic data of the Ashtādbyāyī show that it is older than the Arthaśāstra. For instance, Pānini's (1) Nishka, (2) Suvarna, (3) Šāna, (4) Salamana, point to older coinage not known to Kautilya. Similarly Kautilya does not know of the significant coin names Vimsatika and Trimstaka mentioned in the Ashtādhyāyī, of which actual examples have been found (ante, 270-71). The evidence of Panini's Salamana coin is of great importance in this connection. The Satamana coinage must have been in mintage and circulation in the time of Pānini. Its beginnings may be placed a few centuries earlier. It is significant to note in this connection that the reference to Satamana in the Satapatha Brāhmana is found only in those Books which are associated with the name of Yājñavalkya, e.g. in Kānda V in which Yājnavalkya is quoted as authority and in Kāndas XII, XIII and XIV. There is not a single reference to the Satamana coin in the Agnichayana Books (VI-X) in which Sandilya to the exclusion of Yājnavalkya figures as the principal authority. This accords with the view that Yājñavalkya was considered as a late Brahmana-writer in comparison with the earlier works of Aitareya and Śātyāyana, etc. The chronological inference is that the period of currency of the Satamana coin was confined to a few centuries (c. eighth-fifth cent. B.C.) from which Kautilya was removed in time, but which were nearer to the epoch of the Taittiriya and Jaiminiya Brahmanas and portions of the Satapatha Brāhmana, which alone mention this coin.

Another coin-name of much more precise chronological value is the heavy type of Kārshāpaņa, called Vinišatika, which was 20 māshas or 40 rattis in weight. The silver Karshāpaņa minted by the Mauryan administration, as shown by actual

finds, and as mentioned in the Arthasastra weighed only 16 māsbas. Pānini on the other hand seems to know both classes of silver coins, viz. the Viinsatika of heavier weight as its name signifies, and the Kārshāpana of standard weight, which although unspecified was most likely of 32 rattis as stated in Manu and Kautilya. We have therefore to assign a stage to Pāṇini in which Vimsatika and Karshabana were current coins at one and the same time. This held good in the fifth century B.C. in the time of the Nandas. The heavier kahāpana of 20 māsas (vīsatīmāso kahāpano) was current in Rājagriha during Bimbisāra's reign. It was the local currency of different Janapadas. The Nandas felt called upon to introduce for the first time a uniform system of weights and measures and standard coinage for their empire extending from Kalinga to Panchala. This system is known in medical works as Magadha mana as distinguished from the Kālinga māna which continued as a separate system. The coinage of the Nandas showed the following new features: (1) a standard Kārshāpana of 16 māshas in place of Vimsatika of 20 māsbas; (2) punching of obverse and reverse symbols on two sides of a coin instead of on the same side as before; (3) increasing the number of obverse symbols to 5 in each group, instead of 4 as on Vinisatika and earlier coins; (4) introducing the Sun and Six-armed (Shadara) symbols as constant in the five-symbol groups; (5) simplifying the forms, but greatly adding to the variety of the symbols punched. The new Karshapana of 32 rattis of the Nandas may be actually identified in the thin and broad flat pieces with clear symbols punched on them, which are known from actual hoards. The thick and small variety in which peacockor crescent-on-hill symbols appear belongs to the Maurya period. The distinction of the earlier and later Kārshāpanas is best seen in the form of their six-armed symbols, those having an oval as a constituent are earlier than those with an arrow or taurine.

On the basis of his numismatic data Pāṇini thus belongs to the period of transition between the age of Bimbisāra and Kautilya, i.e. between the sixth and the fourth century B.C. A date in the fifth century B.C. admirably reconciles the coin-references of the Ashṭādhyāyī.

PERSONAL NAMES—The evidence of personal names current in Pāṇini's time also points to the above chronological position. The Gotra-names were current in the Brāhmaṇas and the Upanishads, whereas in the Maurya period two other features appeared, viz. contraction of personal names and star-names, i.e. personal names derived from the names of stars. The Ashtādhyāyī represents a stage between the two when the Gotranames and the Nakshatra-names were in use side by side. The Gotra-nāma was an old Vedic custom, whereas the Nakshatra-nāma was a new feature approved by the Grihya-sūtras. There is no scope for contraction in a Gotra-name, and so the rules of contraction detailed by Pāṇini applied to names other than Gotra names. In this respect the early Buddhist literature shows an equal preference for Gotra- and Nakshatra-names and is thus closer in time to Pāṇini.

PĀNINI AND THE JĀTAKAS—In many respects Pāṇini's language is earlier than that of the Jātakas, but in some cases the coincidence between the two is striking and helpful for chronology. Attention may be drawn here especially to the material for mounting chariots, viz. dvaipa, vaiyāghra and pāṇdukambala, which are mentioned in Pāṇini and the Jātakas (ante, p. 150). The expressions cited above represent older conditions, and as a matter of fact these words occur in the Gāthā portions of the Jātakas which are admittedly earlier than the prose portions. A date in the fifth century B.C. would explain the linguistic similarities between the Ashtādhyāyī and the Jātakas.

PĀŅINI AND THE MADHYAMAPATHA—Pāṇini is always distinguished by his unique balance of judgment in reconciling opposite views and looking at both sies of a grammatical controversy.

While examining the grammatical data of Pāṇini we have

already drawn detailed attention to about half a dozen instances of this spirit of synthesis (ante, pp. 352-5). In such controversies as Mahā-Sāmjūās and Krittrima-Samjūās, Jāti and Vyakti, Anukarana, Upasarga as Vācbaka and Dyotaka, Dbātū as Kriyā and Bhāva, Vyutpulti and Avyutpalli of words, etc., Pāṇini's position is not exclusive, but reconciles the two extremes. In this respect Pāṇini's work can be said to be a true product of its age, the epoch of Majjhima Paṭipadā, the best representative of which was another master-mind, the Buddha himself. Those who accepted the path of the golden mean as the ideal course to follow avoided insistence on extreme views, and we actually find Pāṇini avoiding the mistakes of his predecessors like Śākatāyana who over-emphasized the verbal derivation of all nouns. Pāṇini presents his material throughout the Ashtādhyāyī with an all-comprehensive outlook and synthesis which made his work so popular and acceptable.

SUMMARY—We may now summarise these considerations. The various dates assigned by scholars to Pāṇini range from the seventh to the fourth century B.C. The majority of scholars are inclined towards the fifth and the fourth century B.C. The view taken in this work is that a date nearer the fifth century B.C. appears more probable on the basis of the available data. It takes Pāṇini to be a contemporary of the Nanda king named Mahānanda and thus assigns him to the middle of the fifth century B.C.

The literary argument offers a corrective to the extreme views of Goldstücker about the types of literature and literary works known to Pāṇini. Weber's argument for a date after Alexander's invasion based on references to Yavanānī script and to the confederated army of the Kshudraka-Mālavas has been duly answered. Sir R. G. Bhandarkar's argument based on Pāṇini's supposed ignorance of the south has also been largely met by the fact that Pāṇini's geographical horizon extended from Kamboja (Pamir) to Aśmaka on the Godāvarī, and from Sauvīra (Sind) in the west to Kalinga and Sūramasa (Sūrmā

valley of Assam) in the east, and also included that part of South India which lies within the tropics (VIII.4.25) and also some islands situated in mid-ocean.

The references to such specifically Buddhist terms as Masakarī, Kumārī-Śramaṇā (maiden nuns), Nikāya and Nirvāṇa, suggest that Pāṇini came after the Buddha.

The argument from numismatic data and the nature of current personal names given in the Ashtādhyāyī points in the direction that Pāṇini lived in the same cultural epoch as produced the earliest Pali canon.

Moreover, the striking resemblance of several technical terms between Pāṇini and Kauṭilya, indicates that Pāṇini preceded Kauṭilya but was not far removed from his time.

The astronomical argument is based on the fact that in the list of ten star-names given in sūtra IV.3.34 Śravishṭhā begins the list. This points to the astronomical reckoning of the Vedāṇga Jyotisha in which Śravishṭhā was the first of the nakshatras. This position of Śravishṭhā continued from B.C. 1372 to about 401 B.C., i.e. the close of the fifth century B.C. After this the asterism of Śravaṇa was taken to commence the star-list. This gives us a definite lower limit for Pāṇini's time.

The concensus of this varied evidence is in favour of assigning to Pāṇini a date about the middle of the fifth century B.C. This chronological pointer available for the Ashṭādhyāyī and its distinguished author is somewhat singular in comparison to what we possess for so many other works and masterminds in the literary history of ancient India.



#### APPENDIX I

#### JANAPADA AND THE GREEK CITY-STATE

IANAPADA ANALOGOUS TO CITY-STATE-The Charana, Gotra and Janapada are three typical Paninian institutions of educational, social and political life respectively. It is not without significance that the term Janapada is conspicuous by absence in the Vedic Samhitas. It occurs only in the latest phase of the Brahmana period, and found its full development in the period of the Ashtadhyayi. A comparative study of human societies affords innumerable analogies, and we find unmistakable parallels between the Janapada State in India and the City-State in Greece. Both flourished at about the same period. In Greece a large number of City-States represented so many isolated communities, which were self-contained and had their own systems of government, but all of them had very similar social and religious customs and institutions. A few like Athens and Sparta were more important than others.

JANAPADAS IN INDIA—In India the number of Janapada States was quite large. Pāṇini gives a rich picture of Janapadas extending from Kamboja to Aśmaka and Sauvīra to Sūramasa, of which the geographical aspect has been dealt with in Chapter II and illustrated in the accompanying maps. The Janapada experiment in India was on a much larger scale than in the case of Greek city-states with regard to their extension both in place and time. The fuller lists of Indian Janapadas containing about 175 names, are preserved in the Bhuvana-kosha chapters of the Purāṇas (Vāyu, ch. 45; Matsya, ch. 114; Mārkaṇḍeya, ch. 57; Brahmāṇḍa, ch. 49; Vāmana, ch. 13; cf. D. C. Sircar, Text of the Puranic List of Peoples, I.H.Q., XXX, 1945, pp. 297-314). Almost all Janapada names in

Pāṇini are traceable to that list. The territorial divisions envisaged there are (1) Madhya, (2) Prāchya, (3) Udīchya, (4) Dakshiṇāpatha, (5) Aparānta, (6) Vindhyaprishtha, and (7) Parvata, and the Janapada names are grouped accordingly, which affords a clear picture of the States spread in all parts of the country. The Parvatāšrayin Janapadas of the Purāṇas find pointed mention in Pāṇini as āyndha-jūvins of the Parvata country (IV.3.91), i.e., military high-landers settled in the north-west of India and in the Trigarta country, as explained above (ante, pp. 434-6).

BOUNDARIES—In Greece the city-states were scattered mostly amongst hills and valleys and separated by well-defined boundaries. In India also the Janapadas had demarcated boundaries to which Pāṇini refers as tadavadhi (IV.2.124). The Kaśikā observes that other Janapadas formed boundaries of a Janapada surrounding it on all sides (tad-avadhirapi janapada eva gribyate). A chain of Janapadas occupied the entire stretch of land, and some of them were big enough to admit of several territorial divisions of which the names are regulated by sūtras VI.2.103 and VII.3.12; e.g., the Sindhu divided Pūrva-Gandhāra with capital at Takshaśilā from Apara-Gandhāra with its chief town Pushkalāvatī; similarly Pūrva-Madra, Apara-Madra, and Pūrva-Pañchāla, Uttara-Pañchāla, and Dakshina-Pañchāla.

ACROPOLIS—But it is more in the development of the Janapada State through the ages that we find a striking parallel with the Greek City-State. The polis or the city was the nerve-centre of the City-State, and it was opposed to the open village. The "fluid" term polis signified the acropolis or the fortified town. In India also each Janapada had its fortified town or capital. An interesting list of sixteen Mahājanapadas with their names of capitals is well-known in the Buddhist texts, and similarly twenty-five Janapadas in the Jaina literature together with names of their capitals.

EVOLUTION OF THE CITY-STATE AND THE JANA-

PADA—In the evolution of the City-State there were four well-defined stages known as Genos, Phratries, Phulai and Polis. The polis grew out of small beginnings, 'from the clan—the genos, the patriarchal clan, "the first unit of society"—and passes through the associations of families, the phratries, and the military groupings of clans, the phulai tribes, to the political organism which grew out of a settled life and synœcism' (Glotz, The Greek City and Its Institutions, Foreword by Henri Berr, p. ix).

The last mentioned political organism was the City-State. The analogy holds true in the case of the evolution of the Janapada State in India, which had its humble beginnings in the clan or Jana; the Jana developed a number of individual units called families or Kula, and the associations of families formed the ruling Kshatriya tribes which wielded political power and are termed Janapadins in Pāṇini (IV.3.100). The Janapadins were, according to the Kāśikā, the ruling class in the Janapada (Janapada-svāminah kshatriyāh). This was the stage when the Janapada State emerged in its full-fledged development. The correspondence of the Janapada and the City-State may be set forth below:

I. Clan [Genos] Jana.

II. Families [Phratries] Kula.

III. Tribes [Phulai] Janapadinah.

IV. City [Polis] Janapada.

ABHIJANA—We can now see why in the whole of the Vedic literature there is no reference to the Janapada institution, whereas the Jana finds repeated mention. The Bharata Jana tracing itself to a common ancestor was a compact clan. It must have expanded and the outcome was the increasing importance of independent families or Kulas, which ultimately developed into Gotras and Vamsas. The clan was not yet settled in any particular area, but with the growth of independent families it tended to lose its mobility and ultimately the tribe or Jana came to be tied down to an abode, called

Abbijana in Pāṇini (IV.3.90), literally 'the region that had come under the "land-taking" of a Jana'.

IANAPADIN-The territory of the Jana became the Janapada, whence the original settlers who formed the governing class were called Janapadins. In the Janapada there came to live also other peoples or aliens who were distinguished from the privileged class of rulers or Janapadins proper. The latter were consecrated to rulership and designated as abhishikta vamsya. In sūtra VI.2.34, Pāņini refers to the Rājanyas of the Andhaka-Vrishni Sangha, and, as clearly stated by the Kāšikā, the consecrated Kshatriyas of that confederacy formed the object of the grammatical rule. The evidence of the Lichchhavis of the Vriji Janapada is well-known; the waters of their mangala-pushakarni were used for the consecration of 7,707 Rājans and were closely guarded against others. It is, however, clear that in its later stages the Janapada, irrespective of the fact whether it was republican (more strictly oligarchical as in Greece) or monarchical (i.e. ganādhīna or ekarāja, IV.1.168, vart.) consisted of a very mixed population. Patanjali explicitly says that members of the ruling Kshatriya class in the Mālava republic were called Mālavya, and in the Kshudraka Kshaudrakya, but the slaves and free labourers amongst them were excluded from its application.1 In practice the name of the ruler in a monarchical state and the name of the Kshatriya members who constituted the privileged aristocracy (called apatya) were both derived from the name of the Janapada (Kshatriya-samāna-sābdāj-janapadāt tāsya rājany-apatyavat, vart. on IV.1.168). Thus the king of Panchala and a Kshatriya descendant of Panchala were both called Păńchāla.

JANAPADA, A CULTURAL UNIT-The stages of evolution from Jana to Janapada have yet to be clearly formulated

<sup>&#</sup>x27;इदं ताहिं सौद्रकानामपत्यम् मालवानामपत्यिमिति । अत्रापि सौद्रक्यः मालक्य इति नैतत्तेषां दासे वा भवति कर्मकरे वा । कि तिह्ं। तेवामेव करिमह्नित् । (Bhāshya, IV. 1. 168; II 269).

and studied on the basis of literary evidence which is extensive. The Atharvaveda speaks of small homogeneous communities of people differentiated from one another (babudhā janam), speaking different tongues (vivāchasan) and following diverse faiths (nānā-dharmānam, Prithivī Sūkta, XII.1.45). Soon new factors operated leading to the discovery of fresh centres of population and development of new routes, towns and professions depending on internal trade and commerce. All this contributed to the growth of regional consciousness and the emergence of the Janapada life. The Janapada was not merely a geographical term. It was more of a social, cultural and political phenomenon that found cumulative expression in the Janapada. Each State was free to choose its form of government-a state of circumstances envisaged in such expressions as eka-kritāh (i.e., ekādhīna or rājādhīna), šreni-kritāh, pūga-kritāh II.1.59); each was sovereign and independent so long as its freedom was respected by the neighbouring states; each was free to follow its intellectual and cultural life; each had its own language and local gods. The Buddha permitted the spread of his teachings in the local dialect of each lanabada and also drew attention to the continued worship of the traditional chaityas and deities. In the Greek cities close connection existed in the beginning between political organisation and religion. 'Every city had its deity as had every family' (Glotz., op. cit., p. 19). In India homage to the traditional chaityas and deities, such as Yakshas and Nāgas, was obligatory on all persons in the community, but with the emergence of new faiths like Buddhism and the Bhagavata religion, the religious tie became less rigid and the "cultus" of the clan came to be replaced by a personal religion. The grammatical literature points to instances of linguistic peculiarities of Janapadas, e.g., of Kamboja, Surashtra and Prachya (Bhāshya, I.9). Pānini refers to the particular domestic culture prevailing in the Kuru Janapada for which the linguistic expression Kuru-garhapatam (VI.2.42) had become current. We have already drawn attention to its import. Kātvāyana adds to it Vriji-gārhapatam, which perhaps refers to the system of family government prevailing amongst the Lichchhavis. The Mahābhārata referring to the Kula system of polity mentions its two salient features; firstly there was a Rājā in each household (gribe gribe bi rājānah, Sabhāparva, 14.2); and secondly in the Kula polity some one became supreme at one time, and somebody else at another (Sabhā., 14.6). This refers to periodical election to the headship of the oligarchical State; the system was called Pārameshthya (ib., 14.5). It is also stated that in the Vriji Janapada the social life of its citizens was regulated by the Gana in certain matters such as marriage. The general rule was that no marriage should be contracted outside Vaisālī and even outside its districts. The Śākyans also were very fastidious about the purity of their blood. Similar care in the matter was taken by citizens in Greek city-states.

FORMS OF GOVERNMENT-The Janapada states in India had different systems of government just as the city-states in Greece. Pāṇini refers to several of them, e.g. Gana or Sangha, Avayavas (IV.1.71) or member states of a Union, Leagues or Confederacies as in the case of Trigarta-Shashtha (V.3.116), Rājanyas (VI.2.34), Dvandva or Vyutkramana (VIII.1.15) i.e., Party System, Janapadins, Abhishikta-Vamsya Kshatriyas, Pūga, Śreni, Grāmanī, Vrātas, Kumāra-Pūga, (VI.2.88), Parishadvala Rājā (V.2.112), Samdhi-mišra Rājā (VI.2.154), Ayudhajīvins and Parvatīyas (V.3.91; IV.2.143), etc. The political significance of these terms has been explained in their proper places. Just as bands of mercenary armed soldiers existed in many Ayudhajīvī Sanghas, similarly they existed in Greece and many were enlisted in Alexander's army recruited from the Greek cities and the highlands in Thrace. The code of honour with these fighters also offers scope for comparative study.

COMMON ANCESTRY-The city-states were formed of

small communities of men who generally traced themselves to a common ancestry. The same fiction prevailed in the Janapadas in which the entire Kshatriya class of the Janapadins believed themselves to have descended from an original founder who was almost deified. So long the clan was compact this memory of a common forefather was rooted in truth. For example, the Savitriputrakas mentioned by Panini in the Gana-pāṭha to V.3.116 (Dāmanyādi) formed a clan consisting of one hundred 'sons', all descended from Savitri and Satyavan (Sāvitryāh ... tad vai putrašatam jajne, Āranyaka., 28.3.12). 'Putra' in such cases certainly means 'descendant' and 'one hundred' was an indefinite number. They all bore the title of Rājā and all were Kshatriyas, each family in turn multiplying through its sons and grandsons (te chāpi sarve rājānah kshātriyāh putra-pautrinah, Karna., 4.47). But such a claim for the whole tribe could only be a fiction, maintained seriously through generations. In many cases the names of eponymous founders of the Janapadas were invented, e.g. Anga, Vanga, Kalinga, Suhma and Pundra are stated to be the five sons of Dirghatamas, and each the founder of a Janapada (Adi., 98.32).

JANAPADA CULTURE—The city-state transformed the mental, social, religious and political outlook of the Greeks-leading to an unparalleled flowering of the national genius as was seldom seen in world history. The religious and philosophical contributions of the citizens in the Janapadas constitute brilliant chapters in the history of Indian thought. The intellectual and metaphysical ferment during the Janapada period is well reflected in the Pali and Ardha-Māgadhī literatures and some of the sublime dialogues recorded in the Śāntiparvan are like the Brahmajāla-sutta of Sanskrit literature and bear witness to the moral and intellectual upheaval in the Janapadas. In one respect the change was all too marked, even for India, and it was the gradual secularisation of education and learning which were previously subservient to the

Vedic Charanas. The foundations of most of the scientific and philosophical systems of India were laid in this period. As has been shown in detail, a mass of literature known to Pāṇini had been developed outside the aegis of the Vedic schools, grammar itself being such a subject cultivated by independent master-minds who were a glory to their Janapadas. It is stated for the Greek city-state that Homeric education there was replaced by a type of education which took its colour and shape from the practical and economic needs of the new city. The fact has its exact parallel in the Indian Janapada, where new factors brought into being a new ideal of education serving the needs of trade and economic life. Art and industry were for the first time accorded a place of honour. Yāska had noted this significant change:

#### यया जानपदीषु विद्यातः पुरुषविशेषो भवति ।

Proficiency in the arts required by the life of the Janapada confers on persons a title to distinction' (Nirukta, I.1.5). Pāṇini explains these Jānapadīs as so many vrittis (IV.1.42), i.e. skilled arts and professions devoted to producing the necessaries of life. The Pali literature and Pāṇini record a number of such \$ilpas flourishing with bee-hive activity in the Janapadas.

CITIZENSHIP—Citizens of a common Janapada were known as Sa-janapada (VI.3.85), a term having the same importance as Sa-brahmachārī in the case of the Charana institution to designate all its students (VI.3.86). The Charana appellation, the Janapada appellation and the Gotra appellation—these three were important distinctions of an individual in the Janapada period.

LOYALTY (BHAKTI)—Loyalty of the citizen to his polis and to its laws and rulers was the hall-mark of Greek life and counted as one of its cardinal virtues. Its noblest expression is found in the life of Socrates himself: "As to his parents and his master, so to the laws and his country, he must not

return injury for injury, nor blow for blow. Country is more than a mother: for her sake all things must be endured", Glotz, op. cit. p. 140). The Janapada State was for the citizen his mother—Mātā bhūmiḥ putro aham prithivyāḥ (Atharva, XII. 1.12)—and the Janapada Dharmas or its laws must receive his complete loyalty. Pāṇini designates it as Bhakti, i.e., the political and moral allegiance of the citizen both to the Janapada and its Janapadins (IV.3.100). A citizen of the Aṅga Janapada was called Āṅgaka with reference to his Bhakti to the Aṅga State; and similarly to the Aṅga Kshatriyas, the abhishiktavaṁśya rulers of that Janapada of which the citizen was himself an integral part. The two-fold Bhakti is here significantly distinguished, viz. to the State in theory and to its government in practical life.

LAW (DHARMA)—The new conception of law in the citystate was inspired by religious respect and marked by moral grandeur considered to be of divine origin. It is almost identical with the new interpretation of Dharma given to it in the Mahābharata:

नमो बर्माय महते धर्मी धारयति प्रजाः । (Udvoga., 137.9). It is not the place to enter into details about the new ethico-social meaning of Dharma, but it is clearly intended by Pānini in such a term as Dhārmika, Dharmain charati, (IV. 4.41), where charati is explained as aseva, habitual moral conduct or practice of virtue, and Dharmya, that which is righteous, just, virtuous, moral and accordant with social and universal law (Dharmad-anapeta, IV.4.92). Dharma at once denoted both justice and virtue. The ideal of the Janapada State was the highest development of virtue and its object was to produce the perfect citizen. This ideal is embodied in the famous words of king Asvapati of Kekaya which he uttered in the presence of such citizens as were householders possessing magnificent mansions (mahāśāla), supplied with all the luxuries that Janapada life would provide, but who still chose the path of virtue and learning (mahāśrotriya):

'Within my realm (Janapada) there is no thief, No miser, nor a drinking man, None altarless, none ignorant, No man unchaste, no wife unchaste.'

(Chhāndogya Up., V.11.5)<sup>1</sup>

Reason was cultivated as the ideal of individual perfection in the city-state, and we find a similar ideal embodied in the new word Prajñā, which is explained in several discourses of the Mahābhārata, the Vidura-nīti being a summary of those ideals of virtue and common-sense which were cultivated by the Janapada citizens. The rulers also must be Prājñā (Śānti, 67.27). The sum total of all virtues and of the legal, social and moral ordinances which governed the life of the citizens and the Janapada polity was called Vainayika, to which both Pāṇini (V.4.34) and the Śāntiparva (68.4) refer. The Vainayika functions of the Janapada state are described at length in the Mahābhārata in a chapter with the epic strain 'Yadi rājā na pālayet' (Sānti, 68.1-61).

DEFENCE (Gupti)—The defence of the city-state was of the utmost concern to its rulers as well as the citizens. 'The people ought to fight for the laws as for the walls of its city,' said Heraclitus (Glotz, op. cit., p. 139). The Mahābhārata discusses in detail the defence of the Janapada (kathain rakshyo janapadah, Šānti, 69.1) and lays great stress on Gupti or the military preparedness of the fortified city and its citizens. It refers to parikhā, prākāra, etc. as parts of that defensive system which Pāṇini also mentions. The evidence in the epic is naturally more elaborate, mentioning a full contingent of military and civil institutions needed for the defence of the realm, e.g. durga, gulma, nagara, pura, śākhānagara, ārāma, udyāna, nagaropavana, āpaṇa, vihāra, sabhā, āvasatha, chatvara, rāshṭra, balamukhyas, sasyābhihāra, sam-

ैन में स्ते तो जनपदे न कदवों न मञ्जनः । नानाहितान्निर्वाबिद्वान् न स्त्रैरी स्त्रैरिणी कृतः ॥ krama, prakanthī, ākāśa-jananī, kaḍanga-dvāraka, dvāras, śataghnī, bhāṇḍāgara, āyudhāgāra, dhānyāgāra, aśvāgāra, gajāgāra, balādhikaraṇa, all leading to the complete defence of the Janapada and its pura (Śānti, 69.1-71). We are told by the Greek historians of Alexander how the impregnable nature of the defences of the Massaga and Aornos forts (Maśakāvatī and Varaṇā) helped the heroic Āsvakāyanas of Gandhāra in offering resistance to the invaders.

ASSEMBLY AND COUNCIL-Each Janapada, whether a kingly state or a Sangha, had its assembly (Sabhā) and a governing council (Parishad). In order to become a member of the Assembly the Greek citizen was required to have attained the age of eighteen years when he was enrolled on the register of the deme, but since usually two years of military service had first to be done, it was seldom that a man appeared in the Assembly before he was twenty. Panini also refers to the qualification of a citizen to become a member of the Sabbā whence he was called Sabbya, having become privileged to be enrolled as a member and attend the meeting of the Sabbā (Sabhāyā yah, IV.4.105; Sabhāyām sādhuh, where sādhu specially means yogya, qualified). A Kshatriya young man, when eighteen years of age acquired the privilege of becoming a kavacha-hara (cf. Vayasi cha, III.2.10, kavachaharah kshatriyakumārah), 'fit for military duty,' and at the age of twenty-one became privileged for all political rights and duties. The new word Sabbya was equivalent in meaning to the Vedic Sabheva which Pānini records as an old Chhāndasa term (IV. 4.106). Sabhā had a two-fold meaning, i.e. the assembly and the assembly-hall (Śālā, H.4.23-24).

In the ancient democracies of Greek which did not know the representative system, politics was for the mass of the citizens a regular preoccupation, a constant duty (Glotz, ib., p. 175). There were 42,000 citizens of Athens in 431 B.C., all did not attend and rarely were more than 2,000 or 3,000 citizens seen on the Pnyx. Certain resolutions were supposed

to be taken by the "entire people"; actually, in these cases, 6,000 votes constituted a quorum (Glotz, ib., p. 153). We do not have many details of such matters for the Sabbā in the Indian Janapadas. But we are told that there were 60,000 Khatriyas in the capital of the Cheta State, all of whom were styled rājāno (Jāt., VI.511). It at least means that they were all citizens entitled to the membership of their Sabhā. Amongst the Lichchhavis there were 7,707 rajano. No information is available about the quorum in the Sabba, but in one instance the number of the Deva-jana i.e., the Deva host functioning as the Jana is stated to be 6,000 (shat-sāhasrāh, Atharva., XI.5.2), and again as 3,000 (Brib. Up., III.9.1). The former seems to refer to the quorum of the Jana as a whole, and the latter to the Prithag-Devah (Atharva, XI.5.2.), i.e., the approximate number of members individually attending their Sabbā. These numbers, obviously lacking any other reasonable explanation, seem to have been taken from the procedure as it prevailed in the Janapada assemblies of men. The Vrishnyandhaka heroes assembled in a body in an emergent meeting of their Sabhā are actually compared to the gods seated in the Sudharmā hall (Adi., 212.15). Elaborate seating arrangements were made for the members (ib., 212.13-14).

The Sabhā must have held regular sessions on fixed days, and also emergent meetings convened to consider unforeseen events, as for example, the abduction of Subhadrā by Arjuna. Under the stress of public events, when there was urgent necessity, the Sabhāpāla officer convened an assembly of panic and tumult, summoning the citizens of the town by sounding the war drum (sānnāhikī bherī, Ādi., 212.11).

The Sabhā as an institution existed both in the ekarāja states and the gaṇas. In the former it was named after the name of the king (II.4.23), as Chandragupta-sabhā.

SYMPOLITIES—Under pressure of political events, neighbouring and kindred cities or groups of people united in larger communities. This led to confederations of the most diverse nature. Union was accomplished in all cases by the adoption of a common constitution. This was given the name of sympolity in the Greek city-states. The sympolities which are known to us present so many forms, so many gradations, that it is often puzzling to know how to define them, or one hesitates for the appropriate name. Almost the same political phenomena prevailed in the case of the Janapada states in the time of Pāṇini. He seems to have surveyed these diverse sympolities and arranged the different political terms in the sūtra Śrenyādayah kritādibhih (II.1.59) The first three terms Śreni, Eka and Pūga have reference to three types of states, the diverse nature of their constitutional modifications being indicated by words in the Kritādi gaṇa. The constitutional variety and gradation may be set forth as follows for the Śreni:

- 1. Śreni-krita, formed or organised into a śreni under external pressure of events.
- 2. Sreni-mita, groups of people, with a śreni constitution to a limited extent only.
- 3. Śreņi-mata, united with the approval of the constituent groups, each of the confederating units retaining the status of a śreņi.
- 4. Śreni-bhūta, fully welded or confederated as one śreni, with the spontaneous urge of members.
- 5. Śreni-ukta, having only the formal designation of a śreni, otherwise retaining the independence of each group in the union.
- 6. Śreni-samājnāta, probably similar to an administration in which only a few officials like magistrates, mahattaras, were accepted in common by the contracting parties to the union.
  - Śreni-samāmnāta, a union as śreni, in which a common constitution was adopted by several Janapadas by incorporating some parts of one with some of the other.

- 3. Śreni-samākhyāta, completely and fully merged or brought into a common relationship with one another.
- Śreni-sambhāvita, welded as a unit by the mingling or transference of populations, perhaps akin to synocism in the city-states.
  - Śreni-avadhārita, śrenis forming unions in only a limited or restricted manner.
  - Śreni-nirākrita, śreni that had seceded from the union or hegemony of states to which it formerly belonged.
  - 12. Sreni-avakalpita, a state that was ripe to form a union by virtue of its strength of arms.
  - 13. Śreni-upakrita, a smaller state becoming a partner with a bigger Janapada and earning some advantage fot it by this deal.
  - Śreni-upākṛila, brought near or driven to form a union as a reaction to the menacing growth of some neighbouring state.

We may have two more groups of similar terms for Puga and Eka forms of government.1

The word-meanings given to the various terms of the gana Kritadi are more or less hypothetical and the determining of precise political significance must await further clarification. This much, however, is indicated that they refer to political unions or constitutional forms of diverse nature and extent, by which new states were created out of old ones, embracing new groups, losing some part of their

ेपूग---पूग-कृत, पूग-मित, पूग-मत, पूग-भूत, पूग-उक्त, पूग-समाज्ञात, पूग-समाम्नात, पूग-समाक्यात, पूग-सम्भ वित, पूग-अवकारित, पूग-निराकृत, पूग-अव-कल्पित, पूग-उपकृत, पूग-उपाकृत।

एक—एक-कृत, एक-मित, एक-मत, एक-भूत, एक-उक्त, एक-समाज्ञात, एक-समाम्नात, एक-समाध्यात, एक-सम्भावित, एक-अवधारित, एक-निराकृत, एक-अवकित्त, एक उपकृत, एक-उपाकृत। autonomy, or effacing their frontiers to form into bigger unions, or organising into military bands (pūgas) of varying camaraderie and cohesion.

AVAYAVAS-Pānini refers to this term in sūtra IV.1.173; its meaning cannot be said to be beyond doubt. The Kāšikā mentions six Avayavas of the Salva state, viz., Udumbara, Tilakhala, Madrakara, Yugandhara, Bhulinga, and Saradanda, to which Patanjali adds three more, viz., Ajamidha, Ajakranda and Budha (Bhāshya, II.269). Their territories were far flung over Rajputana and the Panjab without any geographical contiguity. It seems that the Avayavas were Salva citizens who were detached from the main body and quartered on other Janapadas as an occupying colony where they enjoyed all the privileges of the new state, but at the same time considered themselves to be part and parcel (avayava) of the parent state of the Salva Kshatriyas. Thus they were "the Salva people of Udumbara," "the Salva people of Tilakhala," etc., but constitutionally a section of the Salva Janapada. Such a system was known in Athenian democracy where the cleruchs (persons sent out from Athens as occupation forces) were quartered in thousands on the soil of other cities, and were designated as "the Athenian people of Imbros," "the Athenian people dwelling in Scyros," etc. (Glotz. ib. p. 282).

#### APPENDIX II

#### A CRITICAL TEXT OF THE GEOGRAPHICAL GANAS

The material of place-names in the Ashtādhyāyī has been discussed above (pp. 34-74, 434-454). It is proposed to present here a critical text of the Gaṇa-pātha relating to place-names (ante, p. 72). A study of the comparative material of the Gaṇas in other grammatical systems shows beyond doubt that the basis of the Paṇinian Gaṇa-pātha is sound and that its text was adopted in the subsequent systems and preserved in so many recensions for about a thousand years with tolerable textual purity.

The critical text of the geographical Ganas is here presented on the basis of the following material:

- 1. Kāśikā, Kashi edition of Balashastri, 1928.
- Chandra Vyākaraņa with its own Vṛitti which has preserved quite a substantial portion of the Paṇinian Gaṇa-pāṭha (c. 450 A.D.); available in the excellent edition by Dr. Liebich.
- Jainendra Vyākaraņa of Pūjyapāda Devanandi (c. 550-600 A.D.), of which the Gaṇa-pāṭha is preserved in the Mahāvṛitti of Abhayanandi. A complete transcription from several manuscripts was made available by the Bharatiya Jñānapīṭha of Kashi.
- 4. Jaina Śākaṭāyana Vyākarana of Pālyakīrti, a contemporary of king Amoghavarsha (817-877); the commentary Amoghavritti of the author is a voluminous work so far unpublished, but was accessible to me in a Devanāgarī transcript based on a Kannaḍa palm-leaf Ms. by the courtesy of the Syādvāda Vidyālaya, Kashi.

- Sarasvatīkanthābharana of Bhoja (c. 1018-1053 A.D.)
   [edited by T. R. Chintamani, Madras University Skt.
   Series].
- Siddhahaimašahdānušāsana of Hemachandra (1088-1172), with his own Brihad-vritti (c. 1130 A.D.).
- 7. Ganaratnamabodadhi of Vardhamāna (1140 A.D.) Critical editions of the above, except 7 by Eggeling, are wanting, and should in course of time be undertaken. It would then be possible to effect further improvements in the collated text.

The statistical results of the reconstituted text are interesting:

1.	Janapada Names	-	35
2.	Vishaya Names	+ 2	43
3.	Sangha Names		33
	Total		111

4. Towns and Villages Constituted Böhtlingk's

		Text	edition
(a)	(i) 6 Chaturarthika ganas	109	189
	(ii) 17 Chāturarthika gaṇas in		
	sūtra IV.2.80	228	430
(b)	6 Śaishika gaṇas	123	194
- 4	Abhijana place-names, 2 ganas	21	23
	Prastha-ending names, 2 ganas	16	16
-	Kantha-ending names, 1 gana	7	7
		504	859

The total number of place-names in the 17 ganas of sūtra IV.2.80 as listed in Böhtlingk's edition of the Ashṭādhyāyī (Leipzig, 1887),\* and generally in the printed editions of the Kāšikā is 430, which in the reconstituted text is reduced to.

The text of the Gana-pāiha as printed in the Word-Index to Pāṇini-Sūtra-Pātha and Pariiishtas, by Pathak and Chitrao (Bhandarkar Oriental Institute, Poona, 1935), closely follows that of Böhtlingk.

228. We had in arriving at our text tabulated in parallel columns the names as found in the six grammatical systems under purview and also the Ganaratnamahodadhi; the unauthentic or spurious words as well as the later accretions themselves sprang into relief and were eliminated and relegated to footnote, as Variants and Additions. It is now proposed to subject the entire Gana-pātha to a similar critical collation and present the results in a separate volume with requisite details, including the equally important material of the Gotra lists which have been left over from the present study.

The number of names in the 34 ganas under Chāturar-thika, Śaishika and Abhijana suffixes and Prastha-and Kanthā-ending names is 504 in the collated text as against 859 of the Gana-pāṭha printed in Böhtlingk's edition, or what may be called the Vulgate text of the Gana-pāṭha.

The general soundness of the collated text can be demonstrated by the fact that the number 500 is just what has been mentioned by the Greek writers as the number of cities between the Jhelum and the Beas (ante, p. 73), or the Vāhīka region of Pāṇini. A city is defined as a town with a population of 10,000 and over. In the limited area between the upper courses of the Jhelum, the Chenab and the Ravi there were as many as thirty-seven cities, with a minimum population of 5,000 inhabitants, while many contained upwards of 10,000. Megasthenes wrote about the cities of Mauryan India that their 'number is so great that it cannot be stated with precision' (M'Crindle, Megasthenes and Arrian, p. 209). The significance of these figures may be better understood if we remember that in the undivided India of 1941 there were only 57 cities, the number increasing to 75 in 1951. On the other hand in France 455 towns, besides Paris, have more than 9,000 inhabitants.

The printed editions of the Gana-pāṭha led to the statement (ante, p. 74) that the two ganas, Samkalādi (IV.2.75), Arīhaṇādi, etc., (IV.2.80) alone give about 500 names. The

correct figure in the collated text of these two sūtras is only 260. However, the grand figure of 500 recorded by the Greek geographers of Alexander's campaign now finds solid support from the Ashtādhyāyī presenting us with an exhaustive list of the important towns and villages of north-west India. The agreement between these two figures shows the perfection of Pāṇini's method in surveying his linguistic data. The great teacher, in the words of Yuan Chwang, wandered about asking for knowledge and collected a multitude of words. During the course of his fact-finding mission he seems to have omitted nothing of value, and also evolved a simple and clear scheme of classification by which this vast and complex material of geographical names was reduced to order and made an integral part of his grammar.

There now remains the task of identifying the mass of these names. The names of castes and sub-castes and family surnames in the Panjab offer an attractive field, since they are mostly derived from names of places which were once their home-towns (nivāsa and abhijana). The human and linguistic material of Pāṇini's time cannot have totally disappeared; its survival in a changed form is the only natural process of evolution. For example, Saharāliye, a sub-caste of the Agrawala community in the Panjab, trace their original seat to Saharālā in Ludhiana Dist., and these may be connected with Pāṇini's Sarālaka (Takshaśilādi, IV.3.93) and its derivative Sārālaka. Similarly Batrā, a sub-caste of the Khattris, points to Vātraka (Rājanyādi, IV.2.53); Chope, a sub-caste of the Aroras, to Chaupayata (Bhaurikyadi, IV.2.54); Balûje, amongst the Aroras, to Vālijyaka (IV.2.54), etc. Archaeological survey and digging may also help to some extent, since geographical places of antiquity often survive as so many sites.

The sūtra Vishayo deśe (IV.2.52) calls for comment. What was the exact significance of Vishaya? Jainendra, Śākaṭāyana and Hemachandra take it as rāshtṛa, and Vardhamāna as Janapada, which is the same thing. The Kāšikā takes

it as grāma-samudāya. Kātyāyana and Patanjali interpret Vishaya as being identical with Janapada in some cases, but their comments give the impression that even such geographical units as were not a Janapada were called Vishaya. For Pānini, if vishaya and janapada were identical, he would not treat of the former under a separate heading (IV.2.52-54). The truth seems to be that Vishaya denoted sphere of influence', 'lands', 'possessions', and as such was distinct from nivāsa or the actual settlement of the people whose possession it was. A Vishaya included both a bigger unit having the status of a Janapada, or a smaller area which was but an estate. In the words of the Rajanyadi gana, Vishaya denoted Janapadas, while in those of the Bhauriki and Aishukāri ganas (IV.2.54) it was the landed property, their share of estate, thikānā or zamindārī which was the source of their livelihood. The suffixes vidhal and bhaktal (i.e. vidha and bhakta) denoted food, division, share, property. Vidhā (food) seems to be derived from vidha having such a meaning, and bhakta is well-known as denoting 'source of livelihood or maintenance.' The villages (grāma-samudāya) which were the zamindārī of the Bhaurikis were called Bhauriki-vidha, and similarly Aishukāri-bhakta without any reference to the polity that prevailed there.

The position in the post Paninian period was as follows. (1) In the case of big Janapadas, the distinction between the word-forms for Janapada and Vishaya was lost, both being called Aṅgāḥ, Vaṅgāḥ, Suhmāḥ, Puṇḍrāḥ, etc. (2) In some Janapadas like Rājanya, the distinction was retained, as Rājanyaka denoted a Vishaya and Rājanyāḥ the Janapada of the Rājanya tribe. Similarly Vāsātaḥ, Vasātayaḥ, Gāndhāraḥ, Gāndhārayaḥ; Śaibaḥ, Śibiyaḥ. (3) Other smaller units were only Vishayas or estates, like Bailvavanaka, Atmakāmeyaka, Bhaurikividha and Aishukāri-bhakta.

#### · MATERIAL

- I जनपद-कच्छादि (शैषिक) । भगोदि । सिन्ध्वादि (अभिजन) ।
- II विषय-ऐषुकार्यादि । भीरिक्यादि । राजन्यादि ।
- III संब-दामन्यादि । पदर्वादि । यौवं यादि ।
- IV देशवाची (ग्राम, नगर)-
  - (a) चातुर्राधक—ग्ररीहणादि । अदमादि । उत्करादि । ऋदगादि । कर्गादि । काशादि । कुमुदादि । कुमुदादि । कृशास्त्रादि । तृणादि । नडादि । पक्षादि । प्रगदिन् । प्रेक्षादि । वलादि । मध्वादि । वरणादि । वराहादि । सस्यादि । संकलादि । संकाशादि । सुतंगमादि । सुनास्त्वादि ।
  - (b) शैविक-कत्र्यादि । कास्यादि । गहादि । धूमादि । नदादि । पलवादि ।
  - (c) अभिजन-शंडिकादि । तक्षशिलादि ।
  - (d) प्रस्थान्त- क्यांदि । मालादि ।
  - (c) कन्यान्त-चिह्नादि ।
  - (f) गिरि, वन, नदी--किशुलकादि । कोटरादि । अजिरादि । बरादि ।

#### I. JANAPADA NAMES

## (१) कच्छादि (४।२।१३३) (सैविक अण् । काच्छः)

१ कच्छ, २ सिन्धु, ३ वर्णु, ४ गन्धार, ४ मयुगत्, ६ कम्बोज, ७ कश्मीर, ८ साल्य, ६ कुरु, १० रॅकु, ११ अनुपंड, १२ डीप, १३ अनूप, १४ अजवाह, १४ विजापक, १६ कुळूत ।

(1) Kachchhādi. Ref.—K (āšikā) IV.2.133; Ch (andra) III.2.48; J (ainendra) III.2.112; Ś (ākaṭāyana) III.1.46; Bh (oja) IV.3.71; H (emachandra) VI.3.55; V (ardhamāna) 327; P (atanjali).

Var (iants) — 4 Gandhāri (Bh.); 5 Madhura, Madhurāt (J.); 8 Śālva (Ch.); 11 Aņukhaņḍa (K.), a misreading, since K. reads Anushaṇḍa IV. 2.100; also Anūshaṇḍa (H); 14 Ajapāda (Ch.), Ajāvaha (J.); 15 Virūpaka (Ch.), Vijñāpaka (J.), Bijāvaka (Bh.); 16 Kulūna (K.), Kulla (Ch.), Kalūtara (Ś.), Kulūka (Bh.), also Kula, Kulva (V.). In J. Kamboja, Kašmīra, Šālva missing. Sindhv-anta names (as Para-Sindhu, Sthala-Sindhu, Saktu-Sindhu) in Bh. and V. (cf. K. VII.3.19), missing in K. Ch. Ś. but found in Bh. H. V. Also Yaudheya, Sasthāla (H.). P. authenticates in this the reading of Kuru (IV.2.130), Rāṅku (IV.2.100).

# (२) भगीदि (४।१।१७८)

१ भगं, २कस्य, ३ केकय, ४ कश्मीर, ५ सात्व, ६ सुस्थाल, ७ उरस, ६ कीरव्य।

# (३) सिन्ध्बादि (४।३।९३) [बोऽस्याभिजनः, अण् । सैन्धवः]

१ सित्यु, २ वर्णु, ३ मधुमत्, ४ कम्बोज, ५ साल्द, ६ कश्मीर, ७ गन्धार, ६ किष्किन्या, ६ उरस, १० दरद्, ११ गब्दिका।

#### II. VISHAYA

## (४) ऐषुकारि गण (४।२।५४) [विषयो देशे, ऐषुकारि भनतः]

१ ऐवुकारि, २ सारस्यायन, ३ चान्द्रायण, ४ द्वचाक्षायण, ५ त्र्याक्षायण, ६ जीलायन, ७ लाडायन, = सोवीर, ६ दासमित्रायण, १० शौद्रायण, ११ दाक्षायण,

(2) Bhargādi—K. IV.1.178; Ch. II.4.106; J. III.1.158; S. II.4.107; Bh. IV.1.179; H. VI.1.123; V. 202.

Var.—2 Karūsa (J.), also Karūsa (H.); Šālva (Ch. V.), Selvā (J.); 7 Urasa (Ś. H.). V. adds Bharata, Ušīnara.

(3) Sindhvädi—K. IV.3.93; Ch. III.3.61; J. III.3.67; S. III.1.201; Bh. IV.3.212; H. VI.3.276; V. 351-52.

Var.—2 Varņa (J.); Salva (J. H.), Šālva (Ch. Ś. V.); 7 Gāndhāri (Bh.); 8 Kishkindha (J. H.), 9. Urasā (Ś. Bh. V.), Uras (H.); 11 Gandika (Ch.), Gandikā (Ś), Gabdika (J. H.). Ch. reads Takshašilādi also in this. J. adds Panchāla, Kaimedura, Kāṇḍakāra, Grāmaṇī; H. Grāmaṇī, Kāṇḍavaraka, Kulūja; and K. Kuluna, Dirasā, but all are spurious to this Gana.

(4) Aishukāri Gaņa—K. IV.2.54; Ch. III.1.63; J. III.2.47; S. II.4.189; Bh. IV.2.89-91; H. VI.2.68; V. 268-69.

Var.—2 Sārasāyana (J. H.); 4 also Dvyakshāyaṇa (H.); 5 also Tryakshāyaṇa (H.); 6 Aulāyana (Ś. H.), Alāyana (J.); 7. Tāḍāyata (J.). Khādāyana (H. also V.), Khāṇḍāyana (Bb.) 9. K. Ch. Ś. H. V. also read Dāsamitri (Ch. Dāsamitra) 10. Śaudrāṇa (K.), Śaudrakāyaṇa (Ś. H. V.); 11. only in K. Ch. V, and hence doubtful; 12 Śāyāṇḍa (Ch.), Tapanda (J.), with additional variants as Sāyaṇḍi (K.) Sāpiṇḍi (J.), Śayāṇḍa (Bh.), Śāyaṇḍāyana (V.), Śāyāṇḍa and Śāṇḍa (H.); 13. omitred in Ch. J. Bh.; 14. Saubhadrāyaṇa (Ch.) but H. cites Śaubhrāyaṇa-bhakta of Ch., J. Ś. omit it, Śayābhra (Bh.); 15. Vaišvamānava (Bh. also V.); 16. Ch. J. H. omit; 17. Vaišvadheva (J.), also Višadeva (K.); 18. Ch. omits. H. adds flimsy variants as Gaulukāyana, Mālukāyana, and K. as Alāyata, Aulālāyatā, all to be rejected.

Vishayo dese of Păṇini denoted an estate of a tribe or clan; but grama-

१२ शयंड, १३ तास्यायण, १४ शीश्रायण, १५ वैश्वमाणव, १६ वैश्वधेनव, १७ वैश्वदेव, १८ तंडदेव।

#### (५) भौरिकि गण (४।२।५४) [विवयो देशे, भौरिकिविधः]

१ भौरिकि, २ भौलिकि, ३ चैटयत, ४ काणेय, ४ बाणिजक, ६ बालिज्यक, ७ सैक्यत, ६ चैक्यत, ६ चौपयत।

#### (६) राजन्यादि (४।२।५३) [विवयो देशे वृत्र्, राजन्यकम्]

१ राजन्य, २ दैवयातव, ३ झालंकायन, ४ जालंधरायण, ५ आत्मकामेय, ६ अम्बरीवपुत्र, ७ वसाति, म बैल्ववन, ६ झैलूष, १० उदुम्बर, ११ आर्जुनायन, १२ संप्रिय, १३ दक्षि, १४ ऊर्णनाभ, १५ आप्रीत, १६ तैतिल।

samudāya according to K., which J. and H. take as equivalent to rāshṭra, and V. as Janapada.

(5) Bhaurikyadi—K. IV.2.54; Ch. III.1.63; J. III.2.47; S. II.4.189; Bh. IV.2.88; H. VI.2.68; V.267.

Var.—3 Chodayata (Ś.); 5 Vāņejaka (J.), Ch. Š omit; 6 Vālikājya (Ś. V.), Vālikādya (H.); 7 Šaikayata (K., also Ch.); 8 Vaikayata (K.), Vaiyat (J.); 9 K. omits, Chaupagata (J.); Ś. omits 5, and adds Vaidayata, Kshaitayata (also H. V.).

(6) Rājanyādi—K. IV.2.53; Ch. III.1.62; J. III.2.46; Ś. II.4.190; Bh. IV.2.86-87; H. VI.2.66; V. 265-6.

Var.-2 Devayana (K. Bh.), also Devayata (H.), Devayatava (V.); 4 Jālandhara (Ś.), also Jānandharāyana (H.); 6 Ambariputra (Ś.), also Ambarī-Āmbarī-(H.); 7 Vātsaka (J.), H. omits; 8 Bailvata (Ch.), omitted in, J. S; 9 omitted in J. S., Sailūshaja (H.), Sailūshaka (V.); 10 also Audunbara (H.), J. omits; 11 5 omits; 12 Sampriya (Bh.); 13 Dākshāyaṇa (V.); 14 also Ūrṇanābhi (H.); 15 Āprīta is undoubtedly the correct reading (=Afridis), but Ch. omits, and others record incorrectly, Avrati (J.), Avrita (S.), Anrita (Bh. V.), Avrita and Avrītaka (H.); 16 Some original form of Vaitila (K. Bh.), Taitala (S. H.), Tailvala (V.), Bailvala (K.), which seems to have been Taitila, Add. Avrida, Vātraka (K.); Vātrava Kāntāla, Bābhravya, Vaišvadhenava, Vaišvamāņava, Vaisvadeva, Tundadeva (S., last four contaminated from Aishukāri gana); Vaikarna Vasana, Bābhravya, Mālava, Trigarta, Vairāţi (Bh.); Vătrava, Bābhravya, Kauntāla, Vīrāṭa, Mālava, Trigarta (H.); Traigarta, Vasana, Kauttāla (V.). Some original form like Vātraka seems to have been included. P. authenticates 2 (Daivayatava-grahanam vaishayikeshu, IV.2.92; II.291) and 5, 6, 7, 8 (IV.1.52; II.282). The group of Malava, Trigarta, Virāta was taken from Chāndravritti by Bh, and H.

#### III. SANGHAS

#### (७) दामन्यादि (५।३।११६) [आयुधजीविसंघात् स्वार्थे छः, दामनीयः]

१ दामनि, २ औलपि, ३ काकदन्ति, ४ अच्युतंति, ५ शत्रुंतपि, ६ सावैसेनि, ७ वैन्दिनि, ६ मीजायन, ६ तुलम, १० सावित्रीनुत्र, ११ बैजवापि, १२ औदिकि।

#### (८) पश्वीदि (५।३।११७) [आयुषजीविसंवात्स्वार्थे अण, पाईवः]

१ पर्श, २ असुर, ३ रक्षस्, ४ बाल्हीक, ५ वयस्, ६ मस्त्, ७ दशाहँ, ६ पिशाच, ६ अधनि, १० कार्यापण, ११ सत्वत्, १२ वस्।

# (९) यौधेयादि (४।१।१७८)

१ यौबेय, २ शौभ्रेय, ३ शौकेय, ४ ज्यावाणेय, ५ वार्तेय, ६ धार्तेय, ७ विगर्ता, = भरत, ६ उशीनर।

#### IV. PLACE-NAMES

(a) Chāturarthika

#### (१०) अरीहणादि (४।२।८०।१) [चातुर्रीयक वृत्र । आरीहणकम्]

१ अरीहण, २ द्वण, ३ खदिर, ४ भगल, ५ उलन्द, ६ साम्परायण, ७ कौप्ट्रायण,

(7) Dāmanyādi-K, V.3.116; Ch. IV.3.92; J. IV.2.5; Ś. III.4.145;

Bh, V.3.151-52; H. VII.3.67; V.192.

Var.—2 also Aupali (H.); 3 Kākandaki (Ch. B. H.), Kākandi (Ś. H.), Kākadantaki also (V.), 5 Šātruntapi (Ś. V.), Śākuntaki (Ch. J. Ś. Bh. V.); 7 Bindu (K. Ch. J. H. V.); 8 Mauñjyāyani (Bh.); 11 Devavāpi (K.); 12 Audańki (Ś. Bh. V.), Autaki (K.). Ākidanti, Kākaranti, Ulabha, Kokatanti, Apachyutaki, Karkī, Pindī are spurious readings in K.; similarly Audameghi, Aupabindi, Kakundi, Kakundaki in H.; Audavi in Bh. V.; Āvidanti in V. J. and Ś. include the Trigarta-Shashthas also in this Gana.

(8) Parśvādi-K. V.3.117; Ch. IV.3.93; J. IV.2.6; Ś. III.4.145; Bh.

V.3.153; V. 197.

Var. - Balhika (V.); 10 Karshāpaņa (V.); 11 Satvantu (Ch.). J.

includes Yaudheyādi also under Paršvādi.

(9) Yaudheyādi—K. IV.1.178; Ch. IV.3.93; J. IV.2.6 and III.1.158;
 S. III.4.145; Bh. V.3.154; H. VII.3.65 and also in Bhargādi VI.1.123; V. missing.

Var.—3 Śaukneya (K.), Saukreya (J. III.1.158 com., missing in IV.2.6); 4 Grāvāņeya (K. undoubtedly a corrupt reading), Jyāvāneya (Bh. H.) 5 Ghārteya (Ś. H. Bh.; Bh. also correctly Vārteya). Bh. reads 7-9 in Parśvādi, and H. in Bhargādi VI.1.123.

(10) Arīhaṇādi-K. IV.2.80; Ch. III.1.68 (first two words only);

J. III.2,60; S. II.4,202; Bh. IV.2,110-11; H. VI.2.83; V. 286-89.

द भास्त्रायण, ६ मैत्रायण, १० त्रैगर्तायन, ११ रायस्पोष, १२ विषय, १३ उद्दंड, १४ उदंचन, १५ खाडायन, १६ खंडवीरण, १७ काशकृत्स्न, १८ जाम्बवत्, १६ शिशपा, २० किरण, २१ रैवत, २२ बिल्व, २३ वैमतायन, २४ सौसायन, २५ शांडिल्यायन, २६ शिरीष, २७ विधर, २८ विपाश, २६ सुयज्ञ, ३० जम्बू, ३१ सुशर्म।

#### (११) अश्मादि (४।२।८०।८) [चातुर्रोधक रः। अश्मरः]

१ अश्मन् २ सूथ, ३ ऊष, ४ मीन, ४ दमें, ६ बुन्द, ७ गुड, ६ खंड, ६ नग, १० शिला।

## (१२) उत्करादि (४।२।९०) [वातुर्राधक छः। उत्करीयम्]

१उत्कर, २ शफर, ३ पिप्पल, ४ अश्मन्, ५ अर्क, ६ पर्ण, ७ खलाजिन, द अग्नि, ६ तिक, १० कितव, ११ आतप।

Var.-1 Arihana (Bh.); 2 also Druvana (Ch.), Dughana (S.), Druhana (Bh. H. V.); 3 Kharadi (Ś.); 4 H. V. Ś. add Bhalandana; 5 Ulunda (J. Ś. H.); 6 Samparayana (J.), Ś. omits, Khavurayana and Khāpurāyana (H.); 7 Kraushtāyana (J.), Koshtāyana (Ś.), Kaushtāyana (H., also Kaudrāyana), Ausbtrāyana (Bh., also V.); 8 J. omits, but P. treats it as an authentic reading (Bhastrayana-grahanam naivasikeshu, IV.2.92; II.291); 9 Chaitrāyaņa (J.), S. omits, Švitrāyaņi (H.), also Śvaitrāyaṇaka (V.); 11 Rāyasphosha (J. Ś.); 15 Khāṇdāyana (J.) Khāburāyana (Ś.), Khānurāyana (H.); 16 Khanda Vīrana as two words (K.) Khantu Dhīrana (S.), Rakandu, Khandū and Vīrana separately (H.), Khandu, Vīraņa and Khandavīraņa (V.), possibly these two were separate names; 17 Kasakritsna (H.V.), S omits; 18 Aumbayati (S. an obvious corrupt reading); 19 S. (Kanarese transcript) omits; 22 Bailvaka (K., the form by adding suffix), S omits, Bilva (Bh. H. V.), Tailva J. 23 also Maimatayana, Gomatayana (K.), Dhaumatayana (S. V.), also Gaumatāyana (V.); 24 Saumāyana (J. H.), also Sausayana (H.), \$ Bh. omit, cf. Sausuka a Vāhīka town in P. (IV.2.104); 25 S. omits; 26 J. S. H. omit, may be doubtful; 27 J. omits, Badira (S.); 28 Vipāršva (S.); 30 J. S. omit, Jambu (K.); 31 J. S. omit.

Add. Visāya, Vāyasa (J.); Yajādatta, Raudrāyaņa (Ś.); Yajāadatta, Samburāyaņa, Sāmbarāyaņa (H.); Yajāadatta, Kanala, Dalatri, Kaudrā-

yana (V.).

(11) Aśmādi-K. IV.2.80; J. III.2.60; Ś. II.4.202; Bh. IV.2.120;

H. VI.2.78; V. 271.

Var.—2 also Yūsha (K. Ś. Bh. H.); 3 Rūsha (K.), Ūtha (J.); 6 Vrindā (J.); 7 Guḍā (J.), Guhā (Ś. H.), V. adds Gahva and Guhā; Kāṇḍa (Ś. also V.), Kaṇḍa (H.) K. adds Rusha, Nada, Nakha, Kāṭa, Pāma, all uncertain.

(12) Utkarādi—K. IV.2.90; Ch. III.1.68 (only first two words); J. III.2.71; Bh. IV.2.134-36; H. VI.2.91; V.301-3.

#### (१३) ऋश्यादि (४।२।८०।३) [बातुर्राधक कः। ऋश्यकः]

१ ऋद्य, २ त्यक्षोध, ३ शर, ४ निलीन, ५ निवास, ६ विनद्ध (?), ७ परिमूढ, ६ उपगूढ, ६ उत्तरायमन्, १० स्थूलबाहु, ११ खदिर, १२ शकंरा, १३ अनडुह, १४ परिवेश, १५ वेणु, १६ वीरण।

# (१४) कर्णादि (४।२।८०।१३) (चातुर्रायक फिब्र्। कार्णायनिः)

१ कर्ण, २ विसच्छ, ३ अर्कलूष, ४ दुषद, ५ आनडुह्म, ६ पांचजन्य, ७ कुलिश द कुम्भ, ६ जीवन्त, १० जित्वन्, ११ आण्डीवत्, १२ स्फिक्।

#### (१६) काशादि (४।२।८०।५) (चातुर्राधक इलः। काशिलः)

१ काश, २ वाश, ३ अश्वत्य, ४ पलाश, ४ पीयूष, ६ विस, ७ तुण, ६ कर्दम, ६ कर्पुर, १० कटक, ११ गुहा, १२ नड, १३ वन, १४ बर्बूल।

Var.—J. gives only 13 words, as against 43 of K. which may be an inflated version. Bh. H. V. of course follow K. A critical edition of K. can alone throw further light on the original text of this gana.

(13) Rishyadi-K. IV.2.80.3; J. III.2.60; S. II.4.202; Bh. VI.2.114-15;

H. VI.2.94; V. 293.

Var.—3 Širā (K.); 4 mentioned in P. (IV.2.104; II.294); 5 Nivāsa, Nidhāna, Nivāta in K. point to one original; 6 Nivadha (K. J.), Nibandha (Bh. H. V.), Vivaddha (K. J.), all derived from one original; 10 Sthūla and Bāhu (V.), H. reads as one word and also separately, also Sthūlavāha (J.). The list closed with Vīraņa in J.; Ś. also Khaṇḍu; K. Bh. H. V. add Kardama, Parivritta, Amiša; others Araḍu (Araţu), Ašani, which group is doubtful.

(15) Karņādi-K. IV.2.80; J. III.2.60; S. IV.2.202; Bh. IV.2.129;

H. VI.2.90; V.291.

Var.—2 Vašishtha (J. V.); 3 Arkalūsha was one name as read in the Bidādi gaņa in K. and other systems as J. Ś. H., wrongly split here, but Bh. H. V. read both separately and as one word; 4 Dupada (K.), Bh. omits; 5 Anaduhya (K.), Ānuduhya (Ś.); 8 Kumbhī (K. V., the latter also Kumbha, Kuntī); 9 Jīvantī (K.); K. adds Jñāvat; Ś. Bh. H. V. add Ākani, Ānaka, Ākanī, Ākana; Ś. H. V. Jaitra.

(16) Kāšādi-K. IV.2.80; J. III.2.60; S. II.4.202; Bh. IV.2.117;

VI.2.82; V.296-7.

Var.—2 Vāsa (J. Ś. Bh. V.), Pāśa (Bh. H. V.); Pīyūkshā (Ś. H.), Ś. omits; 8 Kārdama (J.); 10 Karkaṭa (J.); 11 Gūha (K.); 12 Nada (Ś.), Nala (H.); 14 Vadhūla (K.), Varghūla (J.), Bandhūla (Bh.), Vartūla (H.), Vachchhūla (V.).

Add. Śākatika (J.), Śīpāla (Ś. H. V.), Kapittha (Ś. H. V.), Madhura,

Jatu (V.).

#### (१७) कुमुदादि (४।२।८०।४) [बातुरधिक ठच्। कुमुदिकम्।]

१ कुमुद, २ शकरा, ३ न्यक्षोध, ४ इक्कट, ५ मतं, ६ बीज, ७ अश्वत्य, ६ बल्बज, ६ परिवाप, १० शिरीय, ११ यवास, १२ कुप, १३ विकंकत।

# (१८) कुमुदादि (४।२।८०।१७) [चातुर्रायक ठक्। कौमुदिकम्]

१ कुमुद, २ गोमठ, ३ रथकार, ४ दशग्राम, ५ अश्वत्य, ६ शाल्मली, ७ मुनिस्थल, = कृट, ६ मुचुकणं।

### (१९) कृशास्त्रादि (४।२।८०।२) [चातुर्रायक छण्। कार्शास्त्रीयः]

१ कुशाइब, २ अरिष्ट, ३ बेश्मन् ४ विशाल, ५ रोमक, ६ शबल, ७ कूट, = बबंर, ६ मूंकर, १० प्रतर, ११ सदृश, १२ पुरग, १३ मुख, १४ घूम, १५ अजिन, १६ बिनत, १७ विकुषास, १= अश्सु, १६ अयस्, २० मीद्गल्य।

(17) Kumudādi-K. IV.2.80; J. III.2.60; S. II.4.202; Bh. IV.2.116;

H. VI.2.96; V.294-95.

Var.—2 Śarkkara (J.), Ś omits; 4 Itkata, Utkata (K.) also Utkata (Bh.); 6 Ś omits; 7 Bilvaja (Ś.); 9 Parivāsa (Ś.); 10 Ś. omits; 11 Yavāsha (K. H.), 13 Vikanta (Ś.).

(18) Kumudadi-K. IV.2.80; J. III.2.60; S. II.4.202; Bh. IV.2.133;

H. VI.2.97; V.285.

Var.—2 Gomatha (K. J.), Gomada (Ś.), but Gomatha (Bh. H. V.) is also authenticated by Ch. (III.1.68); 4 Dāšagrāma (Ś. H.); 8 Kuṭa (H.), Kumuṭa (Bh.); 9 J. Bh. V. Ch. omit, Muchakūrṇi (Ś. also H.); K. adds Kunda, Madhukarna, Śuchikarṇa, Śirīsha.

(19) Kṛiśāsvādi—K. IV.2.80.2; J. III.2.60; Ś. II.4.202; Bh. IV.2.112-13;

H. VI.2.93; V. 290-91.

Var.-3 Vaisya (S.), Veshya (H.), also Vepya (J.), all corrupt readings; 5 also Lomaka (J. S. H. V.); 6 Savala (J. H.), Kabala (S.), also Sivala (H.), also Suvarchala (Bh. H. V.), all corrupt readings; 7 J. omits, Kuta (Bh.); 8 Varvara (K.), Barbala (S.), Bh. H. omit; 9 Sukara (H.), also Sukara (K.), Dūraka (Ś.), Pūgara, Dhūkara, Pūkara (H., who often gives the most inflated version); 10 Pütara (J. also V.), also Pükara (V.), Pūraka, Pūraga (Ś.); 11 Sudriša (Bh.), also Samdriša (H.); 12 Puragā (Bh. S. H.), J. omits, also Púgara, Purāra (V.); 14 Dhūmra (S. also H.); 15 also Ajinata (V.); 16 Vinata (v. l. Vanita, K.), Vinita (H.), K. Bh. H. V. also give Avanata, but J. S. omit, which shows that originally there was only one word, 17 J. omits 17 to 20, Vikūtyā (S.), Vikudyāsa (Bh.), Vikuchyā, Vikutyānkuśa (H.), Vikutyāsa (V.); 18 also Iras (Ś.), Uras (Bh.), Iras, Uras, Arushya (H.); 19 Avayasa (J.), Aya (Bh.), also Sayas (H.), 20 Modgalaya (S.), also Mudgala (H.). V. adds Parāšara, Āsāyas, Dāsī, Satula, Veshya, Iras, Aras, Dhukera, Asura, Abhijana, all spurious variants. S adds Abhijana,

## (२०) तृणादि (४।२।८०।६) [चातुर्राधक स । तृणसा]

१ तृण, २ नड, ३ बुस, ४ पणं, ५ वणं, ६ वरण, ७ अर्जुन, ८ बिछ।

#### (२१) नडादि (४।२।९१) [चातुर्रायक छः कुक्च । नडकीयम्]

१ नड, २ प्लक्ष, ३ बिल्ब, ४ वेणु, ५ वेत्र, ६ वेतस, ७ तृण, = इक्षु, ६ काष्ठ, १० कपोत, ११ कुंचा, १२ तक्षन्।

#### (२२) पक्षादि (४।२।८०।१२) [चातुर्रायक फक्। पाक्षायणः]

१ पक्ष, २ तुष, ३ अंडक, ४ कम्बलिक, ४ चित्र, ६ अतिश्वन्, ७ पन्थ, ८ कुम्म, ६ सीरक, १० सरक, ११ सरस, १२ समल, १३ रोमन्, १४ लोमन्, १४ हंसक, १६ लोमक, १७ सकर्णक, १८ हस्तिन्, १६ बल, २० यमल।

#### (२३) प्रगदिन् आदि (४।२।८०।१५) [बातुर्राथक ज्यः। प्रागद्यम्]

१ प्रगदिन्, २ मगदिन्, ३ कलिव, ४ खडिब, ५ गडिब, ६ बूडार, ७ मार्जार, द कोविदार।

(20) Tṛiṇādi—K. IV.2,80; J. III.2.60; S. II.4.202; Bh. IV.2.118; H. VI.2.81; V.298; Ch. III.1.68 (only first two words, Tṛiṇasā, Naḍasā).

Var.—2 Nada (Ś. H.); 3 Tusa (H.); 4 Arna (Bh.); 6 Charana (K.), Varāṇa (J. Ś. V.); 7 Arṇa (K. Ś.), Arṇas (H.), Bh. omits, also Arṇa (V.), Jana (K., Bh. H.), Janaka (J.), Arṇa, Arjuna, Jana seem to be variants of one original word; 8 Bala (K. Bh.), Phala (J.), also Bala, Bula (V.); Lava (K.), Pula (Ś. H.), Phala (V.) are other variants; Vana in K. Ś. H. V. seems to be an addition.

(21) Naḍādi—K. IV.2.91; J. HI.2.72; Bh. IV.2.137-38; H. VI.2.92;

V.270.

Var.-- 7 Tri (J. H. V.).

(22) Pakshādi—K, IV.2.80; J. III.2.60; S. II.4.202; Bh. IV.2.126-28;

H. VI.2.89; V.278-80.

Var.—2 Tusa (J.); 3 Anda (K. V.); 4 Pilika (Š.), Kambilikā (V.); 5 Chitrā (J., also H.); 9-12 also in IV.2.80.9 (Sakhyādi) where they may be exotic; 15-16 omitted in Bh.; 17 Sakandaka (K.); 18-19 seem to be the original of the confused Astibala, Hasta (K.), Hastabila (J.), Bilahasta, Hasta (Bb.), Bilahasti, Hasta (V.), Bilahasta, Hastin (H.); 20 Pangala (J.); Š omits 18-20.

(23) Pragadinnādi—K. IV.2.80; J. III.2.60; Ś. II.4.202; Bh. IV.2.131;
 H. VI.2.84; V.274; J. Ś., H. V. read Sańkaśādi and Pragadinnādi together.

# (२४) प्रेक्षादि (४।२।८०।७) [बात्रर्थिक इनिः। प्रेक्षिन्]

१ प्रेक्षा, २ फलका, ३ बन्धुका, ४ झुवका, ५ क्षिपका, ६ न्यग्नोध, ७ इनकट, द कंकट, ६ क्प।

(२५) बलादि (४।२।८०।११) [चात्र्रायक य। बल्या]

१वल, २वुल, ३ मूल, ४ उल, ५ डुल, ६ नल, ७ वन, ६ कुल।

# (२६) मध्वादि (४।२।८६) [चातर्राथक मत्य । मच्मत्, मधुमान् ]

१ मबु, २ बिस, ३ स्थाणु, ४ ऋषि (अरिष्ट), ५ इक्षु, ६ वेणु, ७ रम्य, ८ ऋस, ६ कर्कन्यू, १० शमी, ११ करीर, १२ हिम, १३ किशरा, १४ शर्पणा, १४ मस्त्, १६ दार्वाबाट, १७ शर, १८ इष्टका, १६ तक्षशिला, २० शुक्ति, २१, आसन्दी, २२ आसुति, २३ शलाका, २४ आमियी, २५ खड़ा (पीडा), २६ वेटा।

Var.-2 also Saradin (K.), Sādin (J.); 3 Kalira (J.), Kaṭida (S.), Palita (V.); 4 Khadira (J.), Katipha (S.), Khandita (V.); 5 Gadira (J.), S. omits, so also V., 6 Chūdāra (H.); 1. Manjāra (J.), Majāra, Madāra (H.), Mandāra, Madāra (V.). H. also adds Kativa, Katida, Katipa.

(24) Prekshādi-K. IV.2.80; J. III.2.60; S. II.4.202; Bh. IV.2.119;

H. VI.2.80; V. 299.

Var.-2 Halakā (V., also K.); 3 Vandyakā (Ś.), Bandhuka (J.); 4 Dhruvaka (J.), also Dhuvakā (J. Ś. H. V.); 5 Kshiprakā (Ś.); 7 Irkuța (K.), Itkata (J. Bh.); 8 Samkata (K. J.); 9 Kupakā (K.), Kapi (J.); K. adds Karkatā, Sukatā, Samkata, Suka, Mahā, all spurious.

(25) Balādi—K. IV.2.80; J. III.2.60; S. II.4.202; Bh. IV.2.125; H.

VL2.86; V.277.

Var .- 2 Pūla (J.), Pula (H.), Chula (V.), Nula (S. Kanerese Ms. Devanagari transcript, but printed edition Vula); 3 Tula (K.), Mula (J.), also Pula (V.); 5 Dala (J.), Dulala (Bh.), 6 K. alone Kavala, others Nala; 7 Vacha (J.); 8 Krala (J.), Kula (Bh.), no doubt the original reading was Kula, cf. Kulyā in Ch.

(26) Madhvādi—K. IV.2.86; J. III.2.67; S. II.4.196; Bh. IV.2.148-49;

H. VI.2.73; V.300.

Var.-2 Viśa (J.); 4 Mushti (K.), Prithi (J.), Ushti (S.), Rishi (H.), Arishta (Bh. V.); 7 omitted in J. S. H., Roma (Bh. V.); 8 Rishya (Bh. V.), J. S. H. omit; 9 Kukundhu (S.) 11 Sarīra (S.), Kirīra (K.); 13 Kisara (H.), Kisarā (H.), Kisara (Bh.); 14 Sāryaņa (J.), Šaryāņa (S.), Sārpaņa (H.), Asaryana (Bh.), Saryana (V.); 15 J. omits, Bhuvat (S.), Ruvat (H.), also Maruva (K.); 16 Vārdākī (J.), Pārda (Ś.), Pārdā (H. also Pārdākī), Vārdālī (Bh. V.); 17 Saru (H.); 19 J. omits, Akshašilā (Š. H.); 20 Śakti (K.), Śuki (J.); 23 Śālakā (J.), Śakalī (Ś. H.); 24 Āmighī (K.),

## (२७) वरणादि (४।२।८२) [चातुर्राधक प्रत्ययस्यलुप्, वरणा]

१ वरण, २ गोदौ, ३ व्यालिंग्यायन, ४ पणीं, ५ श्रांगी, ६ शाल्मलि, ७ जालपदी, द मयुरा, ६ उज्जीयनी, १० गया, ११ तक्षशिला, १२ उरशा, १३ कटुकबदरी. १४ शिरीय ।

## (२८) वरापादि (४।२।८०।१६) [बातुर्रायक कक् । वाराहकम्]

१ वराह, २ पलाश, ३ शिरीव, ४ पिनड, ५ स्यूल, ६ विदम्स, ७ विभग्न, द बाहु, ६ खदिर, १० शर्करा।

## (२९) सस्यादि (४।२।८०।९) [चातुर्रायक डल् । साक्षेयः]

१ सिंख, २ सिंखदत्त, ३ वायुदत्त, ४ गोहिल, ४ मल्ल, ६ चकवाल, ७ छगल, द अशोक, ६ करवीर, १० सीकर, ११ सरक, १२ सरस, १३ समल।

Amihi (Ś.); 25 Khaḍā (K. Bh. V.), Pīḍā (Ś. H. V.); 26. Veṭa (H. V.), Veda (S.), Vaṭā (Bh.), also Vaṭa (V.), Veyaveṇa (J.),. J. V. add Valmika. (27) Varaṇādi—K. IV.2.82; Ch. III.1.68 (only first two words); J.

III.2.63; Bh. IV.2.144-45; Fl. VI.2.69.

Var.—2 Pūrva Godau, Purveņa Godau, Apareņa Gadau (K.), Goda (Bh. H.); 3 Ālanyāyana-parņa (H.); 5-6 Šringi-Šālmalī (J. one word, so also H. but Šringa-); 7 Jālapada (K.), Jālapadā (H.); 12 Urasa (J.), Urasā (Bh.), K. J. call it an ākriti-gaņa, because of which several other names were added in Bh., but H. preserves a purer text. K. adds Parņī, Vaņiki, Vaņika unknown to H.

(28) Varāhādi-K. IV.2.80; J. III.2.60; S. IV. 2.202; Bh. IV.2.32;

H. VI.2.95; V. 284.

Var.—3 Ś. H. omit; 4 J. Ś. omit; 5 Sthūņa (K.); 6 Nidagdha (J.); also Vijagdha (K. J. Ś. H.); 7 Bhagna (Ś.), 8 Bahu (J.); 10 Śarkara (J.), Ś. omits. For 4, 6 Kanarese transcript has Vinada, Ninada. Ś. has Ayas, Arusa, Maudgalya here from Kṛišāšvādi (IV.2.80.2).

(29) Sakhyādi-K. IV.2.80; J. III.2.60; S. II.4.202; Bh. IV.2.121-122;

H. VI.2.88; V.272-73.

Var.—2 Datta (J. Bh. also H.), Vāsavadatta (J. V.); 3 Vādatta (S. also H.), Agnidatta (also J. Bh. H. V.); 4 Gopila (J.), Gophila (S. H. V.), Gobhila (Bh.); 5 J. omits; 7 Chakravāka (J. Ś. Bh. H. V.); 9 Karavāra (K.), Vīra (Ś.), J. omits; 10 Sarkāpāla (J.), Sīraka (Ś. H.), Kasara (Bh.); 11 Saraka (Ś. H. V.), Kasura (Bh.), J. omits 11-13; 12 Sarala (Ś.); possibly all names 10-13 represent variants of one original form. K. adds Charka, Vakrapāla, Ušīra, Surasa, Roha, Tamāla, Kadala, Saptala, all belonging to an inflated text.

# (३०) संकलादि (४।२।७५) [चातुर्राधक अञ्, सांकलः पौष्कलः]

१ संकल, २ पुष्कल, ३ उदुप, ४ उद्वप, ५ उत्पुट, ६ कुम्भ, ७ निधान, ६ सुदक्ष, ह सुदत्त, १० सुभूत, ११ सुनेत्र, १२ सुपिंगल, १३ सिकता, १४ पूर्तीक, १५ पूलास, १६ कूलास, १७ पलाश, १८ निवेश, १६ गम्मीर, २० इतर, २१ शामंन्, २२ अहन्, २३ लोमन्, २४ वेमन्, २५ वरुण, २६ बहुल, २७ सद्योज, २८ अभिषिक्त, २६ गोमृत्, ३० राजभूत, ३१ भल्ल, ३२ माल।

# (३१)संकाशादि (४।२।८०।१०) चातुर्रायकः ष्य । सांकाश्यः]

१ संकाश, २ कम्पिल, ३ कश्मर, ४ शूरसेन, ५ सुपिवन्, ६ सुपिर, ७ यूप, अश्मन्, ६ कूट, १० पुलिन, ११ तीर्थ, १२ अगस्ति, १३ विरन्त, १४ विकर, १५ नासिका।

# (३२) सुतंगमादि (४।२।८०।१४) [चातुर्रायक इअ्। सौतंगिमः]

१ सुतंगम, २ मुनिचित्र, ३ विप्रचित्त, ४ महापुत्र, ५ श्वेत, ६ गडिक, ७ शुक्र, ८ विम्र, ६ बीजवापिन्, १० स्वन्, ११ अर्जुन, १२ अजिर।

(30) Sankalādi-K. IV.2.75; Bh. IV.2.100-04; missing in J. S. H. V. Var.- 4 Udyāta (Bh.); 10 Subhūma, Subhrīta (Bh.); 12 Sumangala (Bh.); 14 Pūtiki (K.), Pūtika (Bh.); 16 Tulāsa, Mūlāsa (Bh.); 20 also Gabhīra (Bh.); 22 Sarīra (Bh.); 23 Heman (Bh.); 30 Gobhrita (Bh.); 31 Rājabhrita (Bh.); 34 Pāla (Bh.). K. adds after 18 Gavesha, after 31 Grihabhrit. Bh. adds Kapāla, Utpisha, Utpala, Śātāhata, Nihata (Niyata), Karavana, all of which seem to be part of an inflated text.

(31) Samkāšādi-K. IV.2.80; J. III.2.60; S. II.4.202; Bh. IV.2.103;

H. VI.2.84; V. 274.

Var.—2 Kampīla (H.); 3 Kāśmīra (J.), Kaśmīra (Bh. H. V.), Ś. omits, but Kasmara of K. seems to be the correct reading; 4 Sura (S. H., also Śūrasena), Sūra (V., also J.); 5 V. omits, J. also Supatha, Bh. also Supanthi, Suvanthin and Supanthin (H.); 6 original doubtful, Sakthacha (K.), Manmatha (J.), Suparyapa (S.), Sakarnaka (Bh.), Sakarna (H. also Supari); 7 Yūtha (J.), S. omits, Yūpat (Bh.); 9 Kuṭa (Bh.), H. also Kuṭa, Kuṇṭa, J. also Kula; 10 Malina (K. J. also Bh. H., may have been the original reading), S. omits; 11 S. omits; 12 Agastya (S., also H.); 13 Virata (K.), Chiranta (S. V.), but Viranta seems to be the genuine reading (its derivative Vairantya); 14 Chikara (K.), V. omits. Also some other words in Bh. H. V. all inflated texts. K. also reads Amsa, Anga in others.

(32) Sutangamādi—K. IV.2.80; J. III.2.60; S. II.4.202; Bh. IV.2.130;

H. VI.2.85; V.282-83.

Var.-2 Munivitta (H.); 3 Mahāchitta (Ś., also Bh. V.), also Mahāchitra (J.), also Mahāvitta (H.); 6 Aņdika (J.), Gadika (Ś. H.), also

## (३३) सुवास्त्वादि (४।२।७७) [चातुर्रायक अण् । सुवास्तु, न अण्—सौवास्तवः]

१ सुवास्तु, २ वर्गुं, ३ भंडु, ४ खंडु, ४ सेचालिन्, ६ कर्गूरिन्, ७ शिखंडिन्, ६ गतं, ६ कर्कश, १० शटीकणं, ११ कृष्णकणं, १२ कर्कन्युमती, १३ गोह्म, १४ अहिसक्य।

#### IV. PLACE-NAMES (c) Saisheka

(३४) कश्चादि (४।२।९५) [वैषिक ढकव्; कवि-[-ढकव्—कास्त्रेयक]

१ कच्चि, २ उम्भि, ३ पुष्करं, ४ पुष्कलं, ५ मोदन, ६ कुम्भि, ७ कुंडिन, ८ नगरं, ६ माहिष्मती, १० वर्मती, ११ कुडचा।

#### (३५) काश्यादि (४।२।११६) [शैयक विठ्ठव्; काशिकी काशिका]

१ काशि, २ वैदि, ३ सांयाति, ४ संवाह, ४ अच्युत, ६ मोदमान, ७ शकुलाद, ६ हस्तिकर्ष्, ६ कुनामन्, १० हिरण्य, ११ करण, १२ गोवासन, १३ भौरिकि, १४ मौलिंगि, १४ अरिन्दम, १६ सर्वमित्र, १७ देवदत्त, १८ साधुमित्र, १६ दासमित्र, २० दासग्राम, २१ शीवावतान, २२ युवराज, २३ उपराज, २४ सिन्धुमित्र, २४ देवराज।

Khandika (V.); 9 Baijavāpis form part of the Dāmanyādi gaņa (V.3.116) and are known to the Maitrāyaṇī Samhitā.

(33) Suvāstv-ādi—K. IV.2.77; Bh. IV.2.106-07; missing in Ch. J. S. H. V.

Var.—5 Śaivalin (Bh.); 10 Śaśakarna (Bh.); 11 Krishna and Karka (K., an obvious wrong splitting and reading); 13 Gāha (Bh.); 14 Abhisaktha (Bh.). Bh. adds Tandu, Śephālika, Daksha-vikarna.

(34) Kattryädi-K. IV.2.95; Ch. III.2.5; J. III.2.76; S. III.1.4-5;

Bh. IV.3.6-7; H. VI.3.10-11; V.315.

Var.—1 Kattri (Ch. V.); 2 also Umbi (J.), also Umpi, Aumbhi (H.); 4 also Podana (J.), Pudană (V.), Paudana (H.), \$. omits; 6 Ch. J. \$. omit, hence reading doubtful, Kumbhī (K. H.), 7 Kundinā (Ch. \$. Bh. H. V.), Kundinī (J.); 8 Nagarī (Ch. J. V.); 10 K. also Charmanvatī, but Varmatī is supported by all others; 11 Kulyā (K.), Kundyā (\$. H. V.). H. adds Kunyā, Ukshyā, Bhāndyā, Grāmakundyā Trinyā, Vanyā, Pulyā, Pulyā, Mulyā, all trash readings. V. adds Valyā, Vanyā, Mulyā, Trinyā, Bhāndyā, Vulyā.

(35 Kāšyadī-K. IV.2.116; Ch. III.2.33; J. III.2.93; S. III.1.29; Ba.

IV.3.46-49; H. VI.3.35; V. 322-24.

Var.—1 Kāšī (S.); 2 Bedi (Ch.), Vedi (J. Ŝ.), Chedi (Bh. H. V. also v.l. in K.); 3 Samjñā (K. undoubtedly corrupt), Samyātī (Ch.); 4 Sāmvāha

## (३६) गहादि (४।२।१३८) [यथासम्भवं देशवाचिम्यः शैषिकः छः । गहीयः]

१ गह, २ मध्य, ३ अंग, ४ वंग, ४ मगघ, ६ कामप्रस्य, ७ खाडायन, ६ काठेरणि, ह बौकिरि, १० बौंगि, ११ आसुरि, १२ आहिसि, १३ आमित्रि, १४ अवस्यन्द, १५ क्षेमबृद्धिन्, १६ व्याडि, १७ वैजि, १८ जाग्निर्झामें।

# (३७) धुमादि (४।२।१२७) दिश्वाचिम्यः शैषिक वअ । धौमकः]

१ घूम, २ खण्ड, ३ शशादन, ४ आर्जुनाव, ५ दांडायनस्थली, ६ माहकस्थली, ७ घोवस्वली, = मावस्वली, ६ राजस्वली, १० राजगृह, ११ सत्रासाह, १२ भक्षाली, १३ मद्रकुल, १४ गतंकूल, १५ आंजीकूल, १६ द्वचाहाव, १७ व्याहाव, १८ संस्फीय, १६ वर्बर, २० वर्चगर्त, २१ विदेह, २२ आनर्त, २३ माठर, २३ पाथेय, २४ घोव, २६ बाष्प, २७ मित्र, २८ पल्ली, २६ आराजी, ३० धातराजी, ३१ अवया, ३२ कुल, ३३ समुद्र, ३४ कृक्षि, ३१ अन्तरीय, ३६ द्वीप, ३७ अरुण, ३८ उज्जयिनी, ३६ दक्षिणापय, ४० साकेत।

(Š. Bh. H. V.); 6 Mohamāna (K. a corrupt reading); 7 Sankulāda (J.). Śwakulāla (Ś. H.); 8 Hastikarna (J.), Hāstika (Ś.); 9 Kudāman (K., a corrupt reading, v.l. Kunāman), Kulanāman (Ch.), Kaunāma (H.), Kenāma in S. (printed text) but omitted in Devanagari transcription of Kanerese Ms.; 12 Godhāśana (K.), Gauvāśana (Ś.), Gauvāsana (H. also v.l. in V.); 13 Bhārangi (Ch. Bh. H. V.), Bhauringi (J.), Tārangi (S. H., also v.l. in V.); 14 Sărangi (Ch.), omitted in S. Bh. H. V. group, but seems to be genuine (cf. IV.1.173, a member of the Salva state), 15 Sakamitra (J.); Sadhamítra (Ch. J. H. V.), Sudhāmitra (Bh. V.), Chhāgamitra (Ś. H. V.), J. omits; 19 Dāšamitra (Ś. also H.); 20 Dāšagrāma (V., also Dasagrāma); 21 Saudhāvatāna (K. Bh.), omitted in Kanarese transcript, but Sauvāvatāna in printed ed. Ch. adds Kāchi, Gopavana; J. Taranga, Govāhana; Bh. Modana and Amitra; V. Modana and Aritra (said to be Bhoja-sammata).

(36) Gahādi-K. IV.2.138; Ch. III.2.58; J. III.2.115; S. III.1.50; Bh.

IV.3.81-92; H. VI.3.63; V.317.

Var.—The text of this gana combines place-names with other nouns; of a total of 48 words only 18 have been selected, first 15 of which are read in the Chandra-vritti. 7 Khādāyani (Ch. J. Bh. H.), Bhidāyanī (Ś., a corrupt reading); 8 Kāveraņi (K.), Kāreraņi (S.), also Lāveraņi (J. H.). 15 Kheshmadhritvi (Ch. H. V.), Kshaimavriddhi (S.), Kshaimavritti (Bh.).

(37) Dhūmādi-K. IV.2.27; Ch. III.2.41; J. III.2.106; Bh. IV.3.59-61;

H. VI.3.46; V.329-33. S. omits it,

Var.-2 Shādanda (Ch. V.), Shanda (J. Bh.), Shadanda, (H.), Shadāṇda (H. V.); 4 Ārjunāda (K.), Arjunāva (Ch. J. Bh., V. calls it a Vāhīkagrāma); 8 Poshasthalī (J.); 9 omitted in J.; 11 also Sātrāsāha (H.); 12 Bhakshāsthalī (K.), Bhekshālī (J.), Bhakshyādī, Bhakshyālī (H.); 13 Madra-

#### (३८) नद्यादि (४।२।९७) [शैषिक ढक् । नादेयः]

१ नदी, २ मही, ३ वाराणसी, ४ आवस्ती, ५ कौशाम्बी, ६ वनकौशाम्बी, ७ काशकरी, ८ लादिरी, ६ पूर्वनगरी, १० पावा, ११ मावा, १२ साल्वा, १३ दावी, १४ सेतकी।

(३९) पलद्यादि (४।५।११०) [शैषिक अण्। पालद।]

१ पलदी, २ परिवत्, ३ यकुल्लोमन्, ४ रोमक, ५ कलकूट, ६ पटच्चर, ७ बाहीक, द कमलिमदा, ६ बहुकीट, १० नैकती, ११ परिखा, १२ शूरसेन, १३ गोमती, १४ उदपान, १५ गोष्ठी।

#### (c) Abhijana

(४०) तक्षशिलादि (४।३।९३) [बोऽस्याभिजन इति अज्। ताक्षशिल।]

१ तक्षशिला, २ वत्सोद्धरण, ३ कौमेद्रर, ४ काण्डवारण, ५ ग्रामणी, ६ सरालक,

kula (Ch.-H.), Madrasthala (J.); 14 Mitrakula (Ch.), Garta (Bh. V.), H. omits; 15 Añjikula (Ch. H.), Añjalikula (J.), Ājikula (Bh.); 18 Samhāya (K.), also Samstiya (Ch. V.), Sāmstiya (Bh.); 19 Parvata (J.), Barbada (H.); 20 Garta (Ch. H.), Bh. splits Varcha and Garta, and so also V., Garbha (J.), also Varjya (H.); 23 Pādūra (J.); 24 also Pāṭheya (Bh. H. V.); 26 Shishya (K. H.); 27 omitted in Ch. J., 28 Vala (K.), Vallī (Ch.), Palli (J.), Vaṇiyapallī (H.); 29 also Arājñī (H.); 31 Ch. Avayāt tīrthe, Āvayāttīrthe (V.), Avayā (H.), Abhayā (J.), Avayāta tīrtha (K.) as two words; 35 Antarīya (Bh.); 36 Dvipa (Bh.).

K. adds Mānuvallī, Vallī, Surajñī; J. Māņavasthalī; Bh. Mānasthalī (also H. V.); H. Mānakasthalī, Ānakasthalī, Māņavakasthalī, Šakunti, Vanāda,

Imkānta (?), Vadūra, Khādūra.

(38) Nadyādi-K. IV.2.97; Ch. III.2.6; J. III.2.77; S. III.1.1; Bh.

IV.3.9; H. VI.3.2; V.314-15.

Var.—6 J. Bh. omit; 7 Ch. omits, Kâšaparī (Ś.); 8 Ch. omits; 9 Pūrvanagara (Ś., also Bh. H.); 10 Pāṭhā (Bh.); 11 Vāmā (Ch.), Māyā (Bh.); 12 Mālvā (Ś. H., also Bh.), Śīlvā (J.), Śālvā (Ch. V.); 13 Ch. omits; Daurvā (Bh.); 14 Vāsenakī (K.), Saitava (J.), Senakī (Ś.), Saitikī (Bh.), seems to be the same as Setavyā. Ś. V. add Vanavāsī.

(39) Paladyádi-K. IV.2.110; Ch. III.2.20 (only 7, 10, 13, 15); J

III.2.87; Bh. IV.3.29-33; H. VI.3.25-26; V.325.

Var.—1 H. omits; 2 H. omits; 3 Sakrilloma (Bh. V. who cites Vāmana's reading Yakrilloman); 5 Kālakūţa (K.), J. Bh. H. omit, hence reading doubtful, although it occurs in Pāṇini (IV.1.173); K. J. Bh. V. also read Kalakīţa which may have been the original reading here; 8 H. omits; 9 Bāhukīṭa (K.), H. omits; 10 Naitakī (K.), Naiketī (J. H.); 11 H. omits; 14 Udayāna (K.), H. omits. 19 Gaushṭhī (J.). Ch. reads 6, 7, 10, 15.

(40) Takshasilādi-K. IV,3.93; Ch. III.3.41; Bh. IV.3.213-214; V.351.

७ कंस, = किन्नर, ६ संकुचित, १० सिंहकणं, ११ कोव्युकणं, १२ वर्बर, १३ अवसान।

(४१) शंडिकादि (४।३।९२) [सोऽस्याभिजनः व्यः। शांडिक्यः।]

१ शंडिक, २ सर्वकेश, ३ सर्वसेन, ४ शक, ५ शट, ६ वह, ७ शंख, द बोघ।

(d) Prastha-ending names

(४२) कक्योंदि (६।२।८७) [कर्कीप्रस्यः, मधीप्रस्यः]

१ कर्की, २ मधी, ३ मकरी, ४ कर्कन्थू, ४ शमी, ६ करीर, ८७ कटुक, ८ कुवल, ६ बदर।

(४३) मालादि (६।२।८८) [मालाप्रस्थः, शालाप्रस्यः]

१ माला, २ शाला, ३ शोणा, ४ द्राझा, ५ क्षीम, ६ कोची, ७ एक, ८ काम।

(e) Kantbā-ending names

(४४) चिहणादि (६।२।१२५)

१ चिहण, २ मडर, ३ बैतुल, ४ पटरक, ५ बैडालिकणि, ६ कुक्कुट, ७ चित्कण।

Var.—3 Kaimedura (J.), Kairmedura (Bh. V.); 4 Kāṇḍavāra (Ch.), Kāṇḍakāra (J.), Kāṇḍadhāra (Bh. V.); 6 Chhagalalaka and Śakala (Ch.), Chhagala (Bh. V.); 10 Simhakoshtha (K.); Karṇakoshtha (K.), Karṇa (Ch.), Kroshtukarṇaka (Bh.). Ch. combines this gaṇa with Sindhvādi; J. reada only 3, 4, 5; H. casually refers to this gaṇa in the Bṛihadvṛitti of Sindhvādi but does not read it; V. includes this in Sindhvādi.

(41) Šandikādi—K. IV.3.92; Ch. III.3.60; J. III.3.66; Š. III.1.201; Bh. IV.3.211; H. VI.3.215.

Var.—1 Śāṇḍika (Bh.); 5 Saṭa (K. J. Ś. Bh.), 6 Raka (K. Ś. H.), Raha (Bh.), Chaṇaka (J.); Ch. Bh. add Kuchavāra, H. Kūchavāra; J. Godha, H. Charaṇa and Śaṅkara.

(42) Karkyādi—K. VI.2.87, relates to accent, and is not found in other systems.

(43) Mālādi-K. VI.2.88, not found elsewhere.

After 5 is read Kshāmā, which may be a variant of the same name.

(44) Chihanadi-K. VI.2.125.

Var.-2 also Madura; 5 also Vaitālikarņi; 7 also Chikkaņa.

## (f) Mountains (faft)

## (४५) किंशुलकादि (६।३।११७)

१ किंगुलक, २ शाल्यक, ३ अंजन, ४ भंजन, ५ लोहित, ६ कुक्कट।

Forests (वन)

(४६) कोटरादि (६।३।११७)

१ कोटर, २ मिश्रक, ३ पुरग, ४ सिश्रक, ५ सारिक।

Rivers, etc.

(४७) अजिरादि (६।३।११९)

१ अजिर, २ खदिर, ३ पुलिन, ४ हंस-कारण्डव, ५ चकवाक।

(४८) शरादि (६।३।१२०) [मतौ संज्ञायां दीर्षः। शरावती।]

१ शर, २ वंश, ३ धूम. ४ अहि, ५ कपि, ६ मणि, ७ मृति, = शचि।

(45) Kimśulakādi—K. VI.3.117; Ch. V.2.132; J. IV.3.220; S. II.2.95; Bh. VI.2.166; H. VI.2.77.

Var.—1 Kimsuka (Bh.); 2 Sālva (Ś.), Ch. omits 2, 5, 6; Sālvaka (Bh.); 4 Bhānjana (H.); Ś. reads only 2, 3.

(46) Koţarādi—K. VI.3.117; Ch. V.2.132; J. IV.3.220; Bh. VI.2.165; H. III.2.76.

Var.—2 Mithaka (Bh.); 3 Puraka (K.), Ch. J. S. omit; 4 S. omits; 5 Ch. J. S. H. omit, Sărika (Bh.).

(47) Ajirādi—K. VI.3.119; J. IV.3.223; S. II.2.96; Bh. VI.2.167; H. III.2.78.

Var.—3 Alina (J.), Schalina (Bh.); 4 only Kāraṇḍava (J.), Malya, Kāraṇḍava (Bh.). H. says it is an ākṛiti gaṇa. S. reads only 1, 2.

(48) Sarādi-K. VI.3.120; Ch. V.2.134; J. IV.3.223; S. II.2.96; Bn.

VI.2.167; H. III.2.78; V.143.

Var.—5 Kavi (Bh.); 7 Manya (Bh.). K. S. Bh. V. add Hanu. Ch. calls it an akriti gana. H. Bh. V. add Kuśa; H. also Varda, Veța; V. also Rishi. S. omits 2, 3, 7,

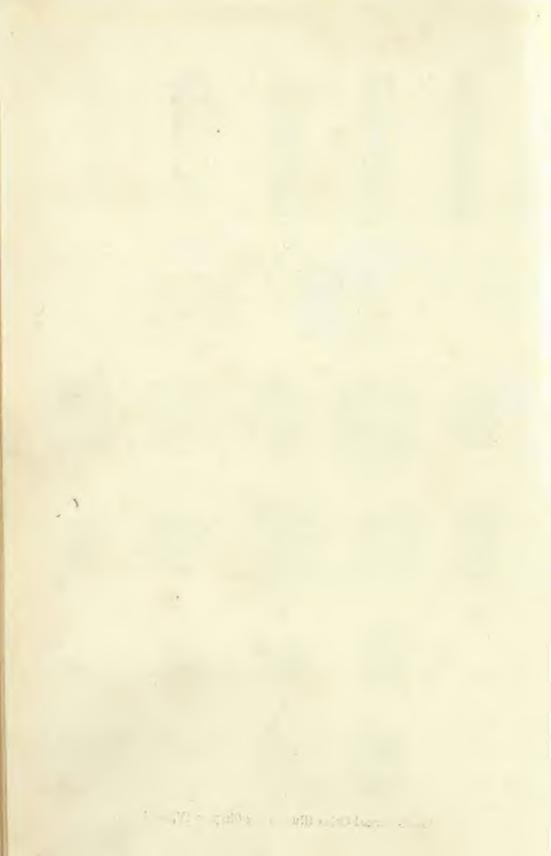
#### KEY TO PLATE SHOWING PUNCH-MARKED COINS

- Fies. 1-5. Satamāna coin (pp. 261-2). Bent-bar silver punch-marked coins from Takshasilā. Wt. 175 to 178 grs. or 100 rattis. Pāṇini V.1.27.
- Fig. 6. Trimiatka coin (p. 271); Păṇini V.1.24. Silver punch-marked from Lucknow, with 14 symbols, obverse (big) and reverse (small) punched on one side only. Wt. 105.7 grs.=57.7 rattis, i.e. 60 ratti or 30 māsba standard, as the name implies. Coinage of the ancient Kosala Janapada, as also No. 7.
- Fig. 7. Trimisatka coin, as No. 6. From Partabgarh. Wt. 104.4 grs. with 1 obverse and 5 reverse symbols punched on the same side.
- Fig. 8. Vimiatika coin (pp. 268-70); Panini V.1.27; 32. From Madhuri, Shahabad Dr., coinage of Magadha Janapada current in the time of King Bimbisara (6th cent. B.C.). Wt. 40 rattis (Visatamāso Kabāpano). Two prominent symbols on one side only.
- Fig. 9. Vimiatika coin. From Bhabhua, Bihar. Wt. 40.2 ratis. Obverse symbols, Sun, Six-armed symbol with 3 ovals and 3 arrow-heads, Bull and Lion; more evolved than No. 8, and hence of the time of Pāṇini (5th cent. B.C.).
- Fig. 10. Vimiatika coin of alloyed silver. From Madhuri. Wt. 68,4 grs. =38 rattis. Four obverse symbols, two bigger, two smaller, two of them being identical; transitional stage between Nos. 8 and 9. Tri-Vimiatika (120 rattis), Dvi-Vimiatika (80 rattis) and Adhyardha-Vimiatika (60 rattis) (Käiikä on V.1.32) and also Ardha-Vimiatika seem to have been actual coins (J.N.S.I., Vol. XV, Pt. p. 38).
- Fig. 11. Silver punch-marked coin from Patna, identified as Pāda-\$atamāna or one quarter of \$atamāna. Wt. 45 grs.=25 rattis. Size .8"×.8".
- Fig. 12. Silver punch-marked coin from Partabgarh, identified as Ardba-Satamana or one-half Satamana. Wr. 44.98 rattis=80.95 grs. Two obverse symbols and one small symbol punched on one side only.
- Figs. 13-20. Silver punch-marked coins or Kārsbaḥāṇas (pp. 263-5) of the wt. standard of 32 rattis; actual wt. is more often a little less owing

to wear and tear. They bear on the obverse a regular group of five symbols (rūpa, V.2.120) of which two are constant, viz., Sun and Six-armed symbol, which is oten designated by numismatists as a Shadara Chakra. This symbol holds the key to the age of the coin by the varying form of its spokes, consisting on some of three ovals and three taurines (No. 15), on others of three ovals and three arrowheads (Nos. 13, 14, 18), and on some of three taurines and three arrowheads (Nos. 19, 20). The first variety (Early) may be assigned to the fifth, the second (Intermediate) to the fourth, and the last (Late) to the third century B.C. (Maurya Period). The coin shown as Fig. 17 is specially noteworthy, as on it the Sun and Six-armed symbols have been replaced by a group of three human figures. This specimen comes from Charsadda in the Peshawar district (ancient Pushkalāvatī, capital of Apara-Gandhāra).

- Fig. 21. A punch-marked Kārshāḥāṇā coin of copper with traces of thin silver plating on it, having a regular group of five symbols and a wind standard of 32 rattis. These specimens seem to represent the debased coinage of the Mauryan administration introduced to replenish the exchequer or meet some unusual drain on the currency.
- Fig. 22. A Half-Karsbūpaņa, 16 rattis (actual 14.6 rattis) in wt., called Ardba and Bbūga in the Asbṭādbyāyī (V.1.48-49; p. 266) and Ardba by Kauṭilya and Kātyayana (VI.1.25).
- Fig. 23. Raupya Māsha (p. 267), minute silver punch-marked coin of 2 ratti wt.=3.5 grs. From Takshašilā. Stamped with a single symbol on one side. The Kāšikā also refers to Adhyardha-Mashaka (1½ Māshaka coin of 3 rattis), Dvi-Māshaka (2-Māshaka coin of 4 rattis) and Tri-Māshaka (3-Māshaha coin of 6 rattis) (Kāšikā, V.1.34; J.N.S.L., Vol. XV, Pt. 1, p. 39).





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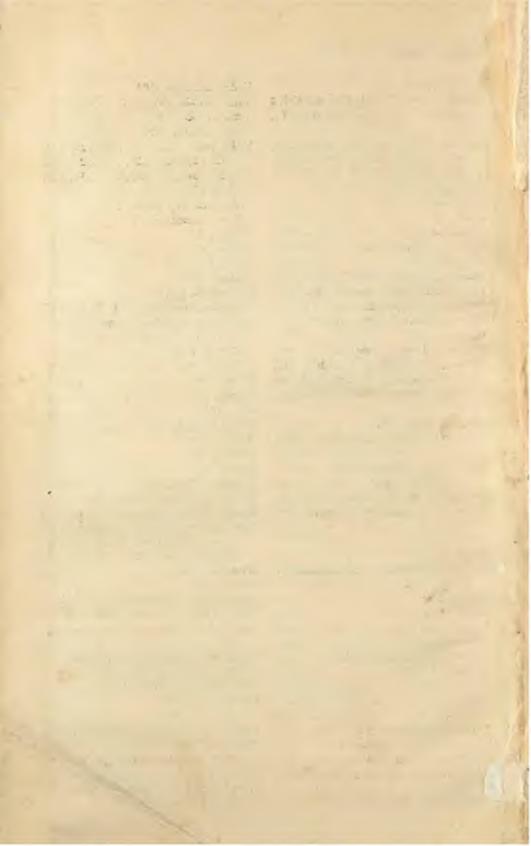
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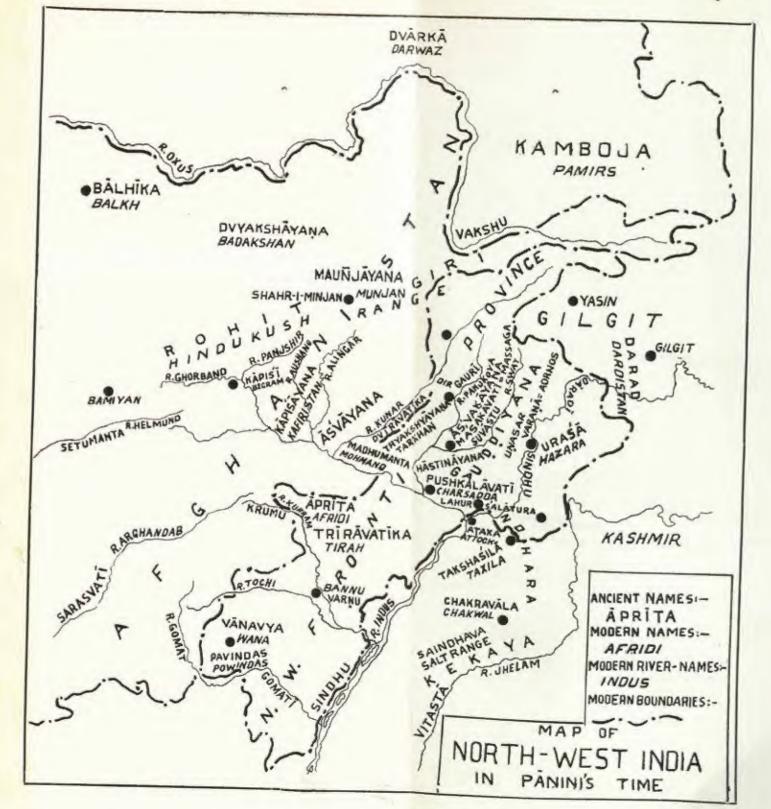
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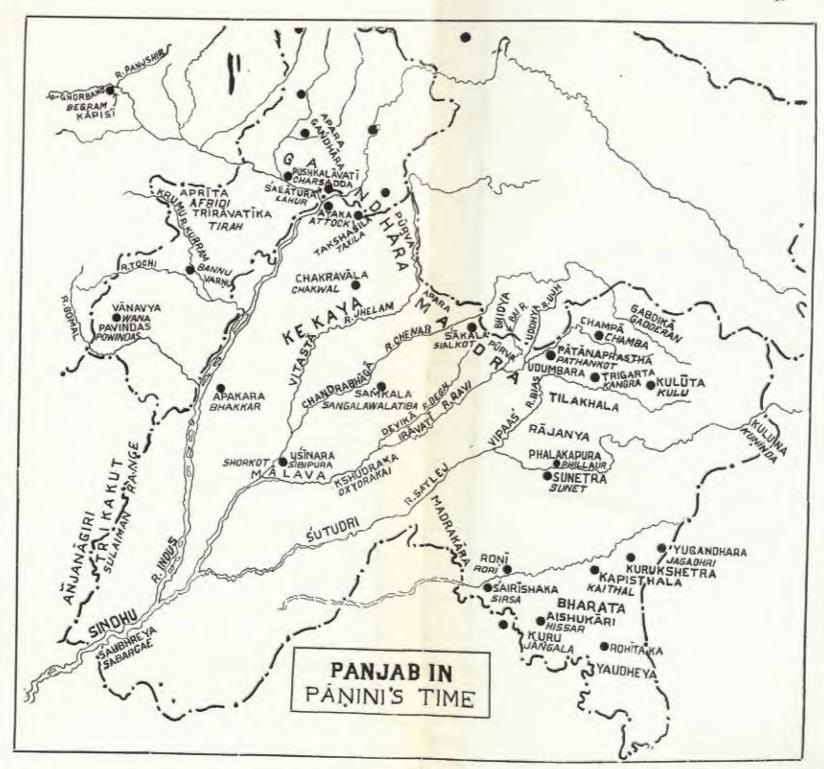
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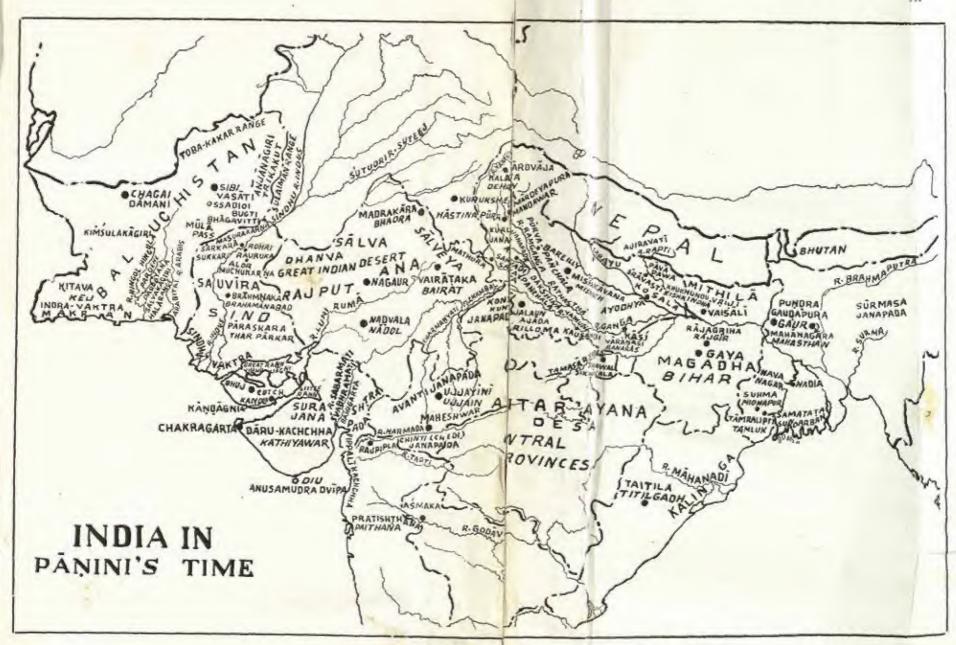




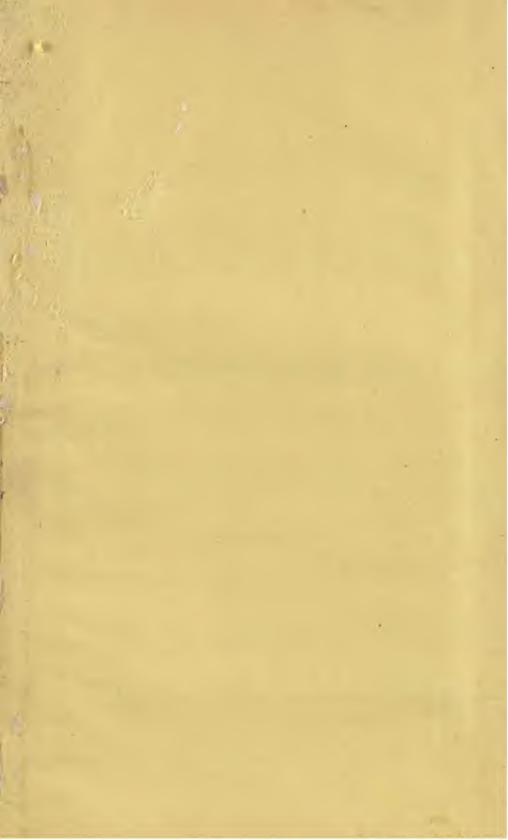




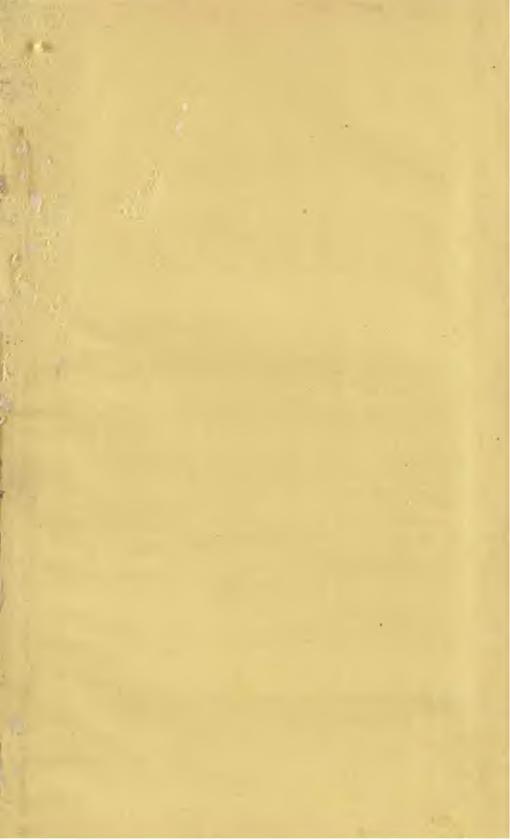


















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